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ABSTRACT

This document contains guidelines to be used by California schools in conducting the Program Quality Review (PQR). Part 1 describes the major steps in the process--preparation, the curriculum self-review process, and implementation/followup. It also outlines the role of consultants. Part 2 specifies criteria for evaluating curricula (health education, history and social science, language arts, mathematics, physical education, science, and visual performing arts) and instructional support. Each curriculum criterion includes a focus statement and description of student work. The instructional support criteria contain a focus statement and exemplars of teaching activity. The third part contains sample timelines, student work summaries, improvement plans, and visitation reports. The final part provides information about the California Alliance for Elementary Education. A list of available California Department of Education publications is included. (LMI)

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1994
Guide and Criteria for Program Quality Review

CALIFORNIA DEPARTMENT OF EDUCATION
Sacramento, 1994

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ELEMENTARY

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Preface

The mission of California's schools is to nurture the intellectual, physical, emotional, and moral capacities of each child to the fullest extent possible so that each can profit by continued schooling and ultimately lead a fulfilling and productive life in our society. Changing the complex structure of a school in order that it may better fulfill this mission is no easy task, particularly in an era of scarce financial resources. However, in order to provide each student in the state an academically and socially empowering education, California's schools need to manage a process of deep, systemic change, which is likely to redefine every aspect of the educational system: curriculum, instruction, assessment, professional roles, and allocation of resources. It is our hope that Program Quality Review (PQR) can facilitate this improvement process, perhaps in a more meaningful manner than it has been able to do in the past.

Throughout most of the 1980s, PQR presented the major messages of the education reform movement to schools as curricular and schoolwide quality criteria, against which schools compared themselves in order to find "matches and gaps" and, based on these findings, decide on action plans for improvement. While this worked quite well throughout the 1980s, many schools are ready to move beyond what they have been doing to examine their programs and to look more closely at the nature and quality of the actual work students are doing as a result of the program to which they are exposed. We feel that this deeper level of analysis of student work we intend to offer through a new program review process can build on the existing base of experience with program review, while offering schools a new opportunity to pinpoint more clearly what their students are working on and producing, and how this work compares with that described in the frameworks and other curricular documents. We also hope that this new process, along with the availability of new documents on reform, new networks for school-to-school collaboration, and new sources for assistance from curricular experts, will help schools determine more precisely exactly what they might change about their curricula so that their students can attain higher levels of academic achievement.

Consequently, the new PQR process was piloted for the first time in approximately 70 schools during the 1991-92 school year and again in approximately 270 schools during 1992-93. Comments from participants in the first pilot study are included in this guide. Statewide implementation began in 1993-94. The changes in PQR, described in more detail in this guide, include the following:

- Revised curricular criteria, which describe the type of work students are producing or accomplishing in a high-quality program and what teachers do, as professionals, to improve that program continually
- Encouragement to schools to focus their Program Quality Reviews on one curricular area, so that they conduct more in-depth self-reviews and so that they target resources more readily toward improvement in this area
- Greater emphasis on schools' self-reviews, as exemplified in this guide and by the new two-day joint training for leadership teams and consultants
- Changes in the role of the external review teams away from the "validation" role of the past to a more collaborative role, which includes more conversation with the school faculty about the nature and quality of student work and the type of program which fosters that work
- Reduction in the size of the consultant teams, increased recruitment of curricular experts and placement as members of the teams, and flexibility in the timing of the teams' visits during the self-review process

The additions for 1994-95 include two new curricular criteria (Health and Physical Education), one new instructional support criterion (Teaching and Learning for Second-Language Learners), and some new sample PQR products. We encourage you to address any ideas and thoughts on how any of the criteria, procedures, or materials can be improved to the School Improvement Office at the California Department of Education.

It is our hope that the PQR is recognized as a vital, ongoing mechanism to facilitate deeper, systemic change in the school. It is important to realize, however, that engagement by a school over the course of a single year in one Program Quality Review is not, by itself, sufficient to inform the school of all that needs to happen. The culture of the school community should be such that all individuals strive to make each and every student succeed in a rich and meaningful program, be prepared to enter the next stage of schooling, and ultimately become a successful citizen and worker. PQR is only one agent for change. It must be accompanied by other critical actions on the part of schools and districts, such as engagement in more authentic assessment practices and investment in the professional development of school staff.

Taken together, these various actions can help achieve the goals of excellence and equity for *all* students in California's schools.

Harvey Hunt, Deputy Superintendent
Curriculum and Instructional Leadership Branch

Merrill Vargo, Director
Regional Programs and Special Projects Division

Wendy Harris, Manager
School Improvement Office

PART I

PROGRAM QUALITY REVIEW PROCESS

Overview

This guide is designed for both the elementary school leadership team that will be responsible for the orientation and preparation of the school's curriculum self-review process and the individuals who serve as consultants to the school during its curriculum self-review. The procedures suggested in this guide are designed with the interests and needs in mind of the elementary grades, but they may be modified to meet the needs of your individual school. The goal of the self-review process is to enable the entire school community to focus, through extensive discussion, on how the curriculum and instruction in your school can be improved so that *all* students in the school can be fully engaged in a high-quality thinking, meaning-centered curriculum. As part of the self-review process, the teaching staff talk in depth about the instructional program and what the nature and quality of their students' work indicates to them about the instructional program. Staff discussion of student work, student performance, student outcomes, and teaching practices, and comparisons of all these to the vision for student learning set forth in the frameworks and in the curricular criteria, lead to a successful self-review—the most important part of the PQR process.

> ***"There has been an explosion of communication within our school. Teachers view the new PQR process as a beginning, rather than an ending. . . ."***
>
> **—from a leadership team member**

Successful PQRs occur when there is collaboration among the principal, leadership team, consultants, and other groups, such as the school site council (SSC) and district administration. Collaboration within the school community must be established early in the preparation process and be maintained throughout your self-review. The result is that school community members will be well informed, participate in important decisions, and know that their views are valued and useful in the process.

Why engage in the curriculum self-review process?

The curriculum self-review process is the foundation on which PQR is built. It is a process that is conducted by members of the school community who are the most knowledgeable about their school. They must have the capacity to be objective about the quality of the school's program and the impact it has on *all* students. A self-review, carried out thoroughly and conscientiously by the school staff, actually determines the success of the entire improvement process; it guides and shapes changes over the three years of the PQR cycle.

The curriculum self-review process gives a school an opportunity to address the highest priorities for curricular and instructional change and to engage in coordinated planning and budgeting. A successful self-review encompasses the following elements at a site:

- A thorough understanding of the frameworks, the model curriculum guides, reform documents, and the PQR quality criteria
- A thorough review of how and what students are learning
- A willingness to ask probing questions to gain fresh insights into curriculum and instruction and examine their effects on student learning
- A willingness to take risks to change the way a school does business
- A capacity to work cooperatively and collaboratively
- A commitment of time and resources to improve curriculum and instruction to support academic improvement
- A recognition that improvement is never finished and that each school must be committed to continual self-examination and self-improvement

"The curriculum review process has helped our school come closer together. Whereas formerly we were fragmented, now we are more attuned to what goes on in other classrooms."

—from a principal

Why focus on student work?

The previous PQR process looked at instructional practices and compared them to exemplars describing teacher behavior and curricular organization. This did not always directly impact changes in how and what students learn. Therefore, the new focus is directly on student work.

The thinking, meaning-centered curriculum, as set forth by the frameworks, is designed to foster for all students a challenging curriculum that promotes active learning and allows them to construct their own meaning. Since student learning reflects what is taught and how it is taught, the school community, through the self-review process, needs to focus first on what students are learning and what they are able to do. Through this emphasis in the self-review, members of the school staff can begin to determine how the program they offer to their students compares to the type of program described in the frameworks and what changes they should pursue in their program so that their students are performing the type of work called for in the frameworks. Based on this type of analysis, the school staff is then ready to determine what improvement strategies they need to pursue to make the necessary changes in their program.

Why focus on one curricular area?

All of the frameworks are based on a consistent philosophy of how children learn, and each calls for instructional strategies that involve students as active, engaged participants in their own learning. Thus, the knowledge about principles of teaching and learning gained within one discipline in the context of PQR can then be readily applied to investigating and making improvements in teaching and learning within other disciplines. Moreover, investigating one curricular area is a manageable task, allowing sufficient time for teachers to grapple with reorganizing content and/or changing their instructional strategies. For just these reasons, one of the recommendations in *It's Elementary!* is to begin curricular reform by mastering reform in a single subject area.

Another advantage of focusing on one curricular area is that the consultants who will be assisting the schools in the process are matched to the schools based on their background in the selected curricular area. For example, a school selecting science would work with two consultants with some background and expertise in that area so that they can suggest additional resources, such as the California Science Implementation Network (CSIN).

> ***"It is a very teacher-centered process with much more talking about what strategies we are going to use to get where we want to be. Change now comes from within."***
>
> —from a leadership team member

How does the new PQR process relate to students learning a second language and students with special needs?

As in the past, the goal of the new PQR process is to improve the curricular and instructional program of the school so that *all* students can succeed in a rich, meaning-centered, thinking curriculum. This goal applies to any student who needs additional support to succeed in this curriculum. For second-language learners, the criteria are applied with the language of instruction in mind. Thus, the new PQR quality criteria describe the type of work *all* students, including those who may be receiving special support, produce all the time in an effective program. The analysis of student work in the new process must include work representative of *all* students in the school.

To assist schools in providing for the learning needs of second-language learners, a new instructional support criterion has been added to use with the curricular criterion chosen by the school. This new criterion will help school staff plan strategies that increase the level of learning of second-language learners in the core curriculum and provide the appropriate instructional services to accomplish that goal.

From where is funding available to make desired changes?

In order to carry out the improvement plan, it is important that the SSC, with the advice and input of the leadership team and the school staff, review allocations in the school's budget for supplemental categorical funds and realign these allocations with the program improvements that your school needs to make. For example, the School Improvement Program (SIP) is a source of funds to support the improvement process in targeted areas. These areas could change from year to year, or an area targeted for improvement could be maintained for three years, or even longer. The important point is that SIP funding should not be viewed as simply an added resource to be divided up equally among teachers or programs at the school year after year. It should be targeted at improvement.

SIP money is available to support the self-review, planning, implementation, and professional development activities vital to significant ongoing improvements at a school site. Other effective expenditures to consider include paying for teachers' release time to plan or participate in training activities or for consultants or trainers who work with the school faculty for extended periods of time to improve teaching and learning in one or more subject areas.

Resources such as the SIP, Chapter 1, State Compensatory Education, Limited-English-Proficient (LEP), Professional Development (SB 1882), Gifted and Talented Education (GATE), and School-Based Coordinated Programs (SBCP) can all be used for professional development to enhance teaching in the core subjects and to provide appropriate instruction for eligible students so that they can succeed in the regular academic program. *The California Department of Education recommends that at least 33 percent of the school's annual supplemental budget (including SIP) be set aside for these types of expenditures.*

What is the role of the school leadership team?

The school leadership team coordinates and monitors the self-review in consultation with the principal and the SSC. The leadership team is responsible for managing the process of collecting and analyzing data and information and for communicating the results of this process to key individuals and groups in the school. This process may alternate between involvement of large groups and delegation of tasks to specific individuals. The team "leads" the self-review by involving the entire staff, not by doing the self-review for the staff. Eventually, all members of the school community should be well informed and able to answer the question, "How are all students doing?"

What is the role of the consultants?

The role of the consultants is to assist your school in analyzing the nature and quality of your students' work; determining the differences between the vision of student work and learning set forth in the frameworks and the work your students are doing; deciding what changes to make in your curriculum and instruction; and developing a viable improvement plan for ensuring that these changes are made. Consultants may work with you at multiple points in this self-review process and assist your school in several ways, depending on your needs and the availability and knowledge base of the consultants. The consultants bring a fresh, objective focus to your work and collaborate with your staff to help ensure that your improvements are effective. In terms of a product of their work with the school, the consultants write a visitation report as documentation of each visit.

What is the relationship between the improvement plan and the school plan?

The improvement plan is developed by the school leadership team and its consultants to address the needs and goals that were identified during the PQR. The school plan is developed by the school site council to use the supplemental funds and resources provided by the special state and federal programs present at the school. Since both the improvement plan and the school plan have school improvement as their focus, both are strengthened if they can be integrated into a single improvement strategy. How this can occur should be one of the early issues to be addressed as the school begins the self-review process. One way of looking at an integrated planning effort is to think of the improvement plan as the in-depth improvement strategy for a selected curricular area and the school plan as the mechanism that will provide the financial resources to support the improvement strategy. For such an approach to be successful, there must be an ongoing dialogue between the leadership team and the school site council. One solution for integrating the two documents is to simply append the PQR improvement plan to the school's plan. Another solution could be to replace the relevant curricular section of the school plan with the new improvement plan. The final choice is likely to be a function of the planning requirements imposed on the school by the district.

What is the relationship between the new PQR process and the new California Learning Assessment System (CLAS)?

While the new PQR process and the new California Learning Assessment System (CLAS) differ with respect to the extent to which they serve an accountability function, they have many features in common. One purpose of the new assessment system is to look at student work (e.g., results from on-demand tests, student portfolios, performances in exemplary tasks) to determine how well students are learning both as a group and individually. This provides accountability for our educational system by letting students, parents, the school, the community, the school district, and the state know how well students are doing. Although the new PQR is not designed to serve an accountability function, it also looks at student work and, to a certain extent, lets the school staff and community know how well their students are learning. Both CLAS and the new PQR are similar in that both are designed to yield information to teachers so that they may improve curriculum and instruction for all the students in their schools.

The new PQR and CLAS share other common features. In the student assessment system, portfolio assessment provides opportunities to measure student growth over time—providing information to classroom teachers which is useful as they choose what to teach and how to teach it. Likewise, as part of the new PQR, teachers work with other teachers to decide what needs to be changed in what they teach and how they teach in order to increase student learning. In addition, teachers involved in local scoring sessions for CLAS (evaluating student products from on-demand tests and student portfolios) will work with other teachers to make common judgments with reference to statewide standards. This professional development related to the shared evaluation standards and procedures will also provide teachers with more insights about program design and its relationship to student learning.

The final connection which relates the new PQR and CLAS lies in the PQR process itself, which includes an analysis of how schools actually conduct assessment. Each PQR curricular criterion sets a standard for conducting assessment within a discipline by describing what students do and produce as part of such assessment. The analysis and improvement of student work must be intimately linked to changes in the way student work is assessed if we are going to move schools closer to a more powerful, thinking curriculum.

What are the major steps of the PQR self-review process?

Schools should proceed as follows in order to engage in a successful Program Quality Review. Each one of these steps will be described in greater detail in the next three sections.

Major Steps in the New PQR Process

Preparation

1. Establish the leadership team.
2. Select one curricular area for in-depth review.
3. Have your leadership team read and discuss the appropriate framework, as well as other relevant documents, including *It's Elementary*.
4. Gather samples of student work in the designated curricular area from your school for use during PQR training.
5. Have three members of your leadership team attend PQR training and make contact with your consultants at the training.
6. Plan strategies for the PQR process for your school, including developing a time line and a plan for working with the consultants.

The Curriculum Self-Review Process

7. Gather information and data about the nature and quality of work your students are doing in your area of focus and the features of the program which foster this work.
8. Compare the work your students are doing and producing with the vision set forth in the frameworks and the "Student Work" section of the curricular quality criterion regarding what students ought to be doing and producing, and develop a student work summary.
9. Discuss and make choices about what you are going to do to improve the program and, consequently, the nature and quality of student work in your selected curricular area. (Use the instructional support criteria and the "Professional Practices" section of the criterion for your selected curricular area to help make these choices.)
10. Develop a multiyear improvement plan, incorporate the activities into your school plan, and report to the community.
11. Send the PQR Completion Form to the School Improvement Office, California Department of Education, through your district office.

Implementation and Follow-up

12. Continue to work with your school site council (SSC) to allocate categorical resources, as appropriate, for activities in the improvement plan.
13. Implement your changes, monitor their results, and adjust your improvement activities as necessary.
14. Report periodically to the community.

Preparation

This section describes how to prepare for conducting the curriculum self-review. A scenario for a school that has chosen to focus on science is provided to help you picture a review in the school setting. Portions of the scenario are included in italics just after the description of each step. While the steps are described as discrete and sequential, it is important to understand that some of the steps occur simultaneously and are ongoing.

1. Establish the leadership team.

The size of your leadership team depends on the size of your school, grade levels, and the breadth anticipated for your self-review. For small schools, everyone on the staff could be part of the leadership team. Large schools may want to select grade level representatives. The team leader may be elected by the members of the leadership team, appointed by the principal, or even be the principal. Some schools release a teacher part-time during the school year to serve as team leader or self-review coordinator.

If your school selected the curricular area of focus prior to establishing the leadership team, then "lead" teachers or curriculum specialists from that area should be part of the leadership team. However, if the curricular area is selected after the leadership team is established, then you could leave one or two positions open so that curriculum specialists can be added later.

> ***"We're really collaborating as a staff—the pressure is off the principal to do everything herself because everyone at our school is involved."***
>
> —from a leadership team member

Your leadership team should be composed of teachers, curriculum specialists, program coordinators, the principal, resource specialists, bilingual teachers, and others knowledgeable about the school program (SSC members, parents, community members, district and school support staff, library media staff, and students).

Members of the leadership team should have the following qualifications:

- Currently play a significant role in the school's curricular and instructional planning process and/or be a representative of a site or district curriculum committee.
- Be knowledgeable about the type of program envisioned in the framework for the curricular area of focus.
- Show willingness to commit time for the self-review, collaboration with the consultants, and follow-up implementation.

The leadership team has the following responsibilities:

- Coordinate a self-review that is thorough enough for the development of a clear and accurate understanding of the effectiveness of the program as compared to the type of program described in the relevant framework and quality criterion.
- Review the curriculum framework, handbooks, model curriculum guides, and other relevant documents (such as *It's Elementary!*).
- Coordinate the collection of student work and information on student performance and student outcomes.
- Analyze student work as a basis for discussion with school staff about curriculum and instructional practices.
- Assess the impact of the school environment on students' ability to learn.
- Prepare a written summary of student work.
- Make recommendations for improvements in curriculum, instruction, and school environment that will produce improved student learning in your school.
- Share the knowledge of your school's program with the external consultants and assist them in gaining accurate and complete information about the program.
- Collaborate with the consultants on the development of the improvement plan and provide active leadership in the school's ongoing implementation of the improvements.
- Report the findings about student work and the plans for improvement to the school and its community.
- Keep the SSC informed about the progress of the self-review.

Scenario

I am a fifth grade teacher at Einstein Elementary School (grades K–6; enrollment of 550 students with a diverse student population). I have been a member of the leadership team for the past two years. In 1992, it became clear that our school would be piloting some new PQR materials and procedures. I have decided to keep a journal for documentation purposes about our self-review procedures and our thoughts and ideas as we progress through this new PQR process.

March 25, 1992

Our leadership team was re-established this spring. It had been somewhat active since our last review three years ago, but two teachers had left the team and were not replaced (one retired and one transferred to another school). Nevertheless, the leadership team has continued to monitor the progress made since our last PQR, and the staff feels pretty good about the changes we have implemented so far.

The principal asked for two new members to join the "veterans" on the team. We now make up a group of five, including the principal, a kindergarten teacher, a reading teacher, our resource specialist, and myself (a fifth grade teacher). The kindergarten teacher and the resource specialist are the new members.

The "new" leadership team began having after-school monthly meetings in early spring to decide the curricular area that we wanted to focus on in our review next year. We also talked about how we will keep the SSC informed about what we are doing so that they have a good understanding about why we will make certain recommendations for allocating funds to improve our school. Since they will actually determine how the money is spent, we need to keep them informed throughout this process.

2. Select one curricular area for in-depth review.

As part of the selection process, you may want to review some of the available data and perhaps some other information about student performance in various curricular areas to assist you in making a decision. It is helpful to look at a variety of sources to determine how your students are doing in order to make the most appropriate selection of an in-depth curricular area. You may want to gather data from sources that you have already been monitoring in your school, as well as ask teachers about their perceptions of what is going on in each curricular area.

You may want to look at student work (products) as well as students working (performance). However, care must be taken to ensure that the way a student is asked to display knowledge—whether in writing, oral presentations, project work, or through tests—is a valid indicator of what the student knows. For example, requiring a limited-English-proficient student to take a mathematics test in English may not indicate mathematics proficiency, but only the student's ability to use English to do mathematics.

You may also want to look at the California Learning Assessment System (CLAS) test results for your school and other student achievement data; review data by looking for trends over time and by subgroups. Your

Performance Report for California Schools, School Accountability Report Card, and other data related to program practices will help your school conduct an informed analysis of how your students are doing.

How you ultimately decide on an area is up to you. The recommendation is to concentrate on only one area so that a complete and thorough review of student work in that area may be conducted and so that resources can be targeted more readily at improvement in this area. However, this recommendation is not meant to be restrictive. As an elementary school, you may want to reflect on changes in other disciplines that would strengthen or support changes in your chosen area. Remember that a school has only a finite amount of time to spend talking and planning. If this time is spread thinly across multiple subject areas, you may never discuss to your satisfaction the potentially very complex issues of curriculum and instruction in your chosen area.

After the curricular area is selected, add to your leadership team the appropriate curriculum specialist or the person(s) most knowledgeable about the area that you chose if they are not already part of the team.

TIPS:

- Consider looking at student performance in several subject areas before selecting the in-depth area.
- Examine district curriculum priorities, e.g., instructional materials adoption, and consider any special district or county resources which may be available to you because of these priorities.
- Take a risk and choose an area that has not been emphasized in any recent review and that could benefit greatly from a self-review and eventual change.
- Take advantage of staff initiative, i.e., there may be teachers who for some time have been interested and motivated to make changes but have not had the opportunity.
- Determine whether there are any community priorities for improvement.

Scenario

March 25, April 8, and May 6, 1992

At the leadership meetings on the dates listed above, we engaged in a continuing discussion of the choice of a curricular area based on ideas the leadership team had heard from the rest of the staff. The history–social science textbooks had just been purchased, so some teachers wanted to focus on this area. Some teachers felt their students' scores were in need of improvement in mathematics and that choosing mathematics would facilitate this improvement. Others said science was the critical area for focus because the school lacked materials for hands-on activities. One teacher argued persuasively for science, recognizing that our students may soon be taking the new CLAS test. The visual and performing arts area was suggested as another means to improve the creativity and performance of the students. Still others wanted to focus on language arts because they wanted to begin a writing-across-the-curriculum program they learned about in last summer's writing project. We took our deliberations to the total staff at two staff meetings and to our parents at the SSC meeting. Many of the parents serving on the SSC are also active in our Parent Faculty Club, so we knew we had covered several bases. Our district SIP coordinator was very supportive of the notion of a site-based choice and left the selection of the focus area to our leadership team. Eventually, we decided on science.

"We like the idea of looking at one curricular area. We feel it gives us permission to admit we need to improve."

– from a leadership team member

I think two factors really persuaded us to choose science: one was the new CLAS performance-based science assessment, and the other was that our district would be reviewing and adopting science materials next year, and we wanted to become more knowledgeable about the Science Framework *prior to this adoption. The national emphasis on improving mathematics and science was also a factor but not as much as the reality of the recent performance-based statewide field testing in science. We felt sure our students would not measure up when new forms of assessment were mandated, especially in light of our mediocre science scores on the standardized tests used by our district. Many of the teachers, including some of us, felt that we lacked training; we also admitted we had a tendency to avoid teaching physical or earth science. In addition, a few of our teachers had recently been to local science conferences and had a* very *positive feeling about choosing science as our in-depth area of study. We felt that making our program more activity-based was a realistic goal. We all agreed that our students would enjoy doing more things in class, and changing the program in this way would make learning more meaningful to the students since they all were so curious about the natural world around them. Besides, there was a high possibility that our staff members would collaborate more closely as we all learned together about science.*

After science was selected as the curricular area on which to focus, we wanted to add a science specialist to our leadership team, but we did not really have one at the school. We were going to rely on whatever outside help we could find and do the best we could.

3. Have your leadership team read and discuss the framework for your in-depth area, as well as other relevant documents, including *It's Elementary!*

In addition to having the leadership team read and become familiar with the curriculum framework for your in-depth area, they can also refer to the K–8 model curriculum guides, handbooks, and other reform documents, such as *Here They Come: Ready or Not* and *It's Elementary!* These documents can help your leadership team arrive at a shared vision of what a high-quality curriculum is and help you determine what students should be doing in a powerful learning environment.

TIPS:

- Designate one or two "teacher leaders" in the school and arrange for them to attend a Subject Matter Project Summer Institute, if possible (preferably during the summer prior to the PQR).
- Identify possible district and county curriculum resources.

Scenario

June, 1992

To prepare for our participation in the pilot PQR program for 1992–93, and for our participation in the PQR training, we purchased the Science Framework *and* It's Elementary! *with SIP funds for every teacher and began becoming familiar with the document that was new to us. In late May, the leadership team brought in a science teacher from another elementary school in our district who is involved with the California Science Project (CSP) to speak with us one afternoon after school. She gave us an overview of the framework and helped us begin to understand its themes as connectors to conceptual teaching. (A few of the leadership team members thought, "What have we gotten ourselves into? This is a whole new way of looking at teaching!") She said she would be glad to assist us next year, and could put us in touch with the California Science Implementation Network (CSIN) for more ideas. She also recommended that we schedule some time next year with our district science curriculum specialist.*

The leadership team decided to take on some summer reading so that our team meetings and in-service sessions in the fall could capitalize on our growing knowledge of the Science Framework. *We decided to jigsaw the framework, each one of* *us becoming an expert on some section of it. All of us would read Chapter 1—"The Nature of Science." Luckily for me, I have read the framework once, but I am glad to have a chance for professional dialogue about it. A number of other documents were suggested for review by the teacher involved in the CSP, including* Science for All Americans *by the American Association for the Advancement of Science. She had one copy that she left with us. We decided that, as time permits, we will study other relevant sources of information and that we will encourage individuals to report on readings in short presentations at our regularly scheduled leadership team meetings. Once the leadership team has a handle on the framework, we will feel more comfortable about teaching our staff about it and distributing copies of the science criterion to everyone.*

We also asked the principal to look into using our fall noninstructional day, available to us as part of our School-Based Coordinated Program, for the purpose of briefing the entire school faculty on the content of the Science Framework *and science criterion.*

Finally, our principal contacted the district staff person in charge of PQR and indicated that we had chosen science as our area of focus. The district person passed this information on to our local PQR consortium representative.

> ***"The strong benefit for both leadership teams and consultants is having time to talk with other teachers about student learning. . . . The opportunity offered within the training and debriefing meetings to share was invaluable."***
>
> —from a leadership team member

4. Gather samples of student work in the designated curricular area from your school for use during PQR training.

Prior to attending the training, you need to gather some student work in the selected curricular area. Select five to ten pieces of work from your selected curricular area that are representative of all students. The pieces of student work should reflect a good sampling of what the students are producing in your current curriculum. The student work can be written work, project work, written records of oral presentations, charts, posters, and so forth. The work will be used during training so that leadership team members and consultants can gain some experience in analyzing student work.

5. Have three members of your leadership team attend PQR training and make contact with your consultants at the training.

While attending the two-day training, the three members of your leadership team not only gain insight into how to conduct a thorough curriculum self-review in your school but also receive practical, hands-on experience in using the frameworks and the quality criteria in focusing on student work. Moreover, the team members will have the opportunity to discuss curricular and instructional issues with faculty from other schools who have chosen to focus on the same subject area. Finally, since consultants will attend this same training, this is an opportunity for you to become acquainted with your consultants.

6. Plan strategies for the PQR process for your school, including developing a time line and a plan for working with the consultants.

On returning to your school, the leadership team should plan how to conduct the PQR process. The team needs to plan how to involve the rest of the staff, how to collect student work, and how to schedule classroom observations, and they need to determine the points at which you might profit most by the involvement of your consultants. These plans for the PQR process should culminate in a time line. The time line should be reasonable, fit the school calendar, and allow for flexibility. (See sample time lines on pages 274–276.)

The following are some optional questions that may help you prepare for the PQR and get discussions started at your school. It is important to note that these questions are not subject-matter specific, and they should be adapted to fit your selected curricular area.

Questions for the Leadership Team

How should we organize ourselves for the curriculum self-review?

What strategies will we use to communicate with our teachers?

What are some ways in which we could collect student work?

What will our time line be?

What resources are available to us in our self-review—from our district, the county, California subject matter projects, and other sources?

When can we meet and how can we structure these meetings to foster a successful self-review? Will we need to use School Improvement funds and other categorical funds to free teachers to participate in these meetings?

How can parents of *all* students, including LEP, Chapter 1, special education, and GATE students, be involved in the self-review process?

What communication strategies will we use to inform the community about the status of the PQR as this process unfolds this year?

Questions for Teachers in Preparation for the Curriculum Self-Review

How do we know *all* students are actively engaged in learning?

How do we interact with our students? In what ways are teaching and learning in our school student-centered?

What environmental factors are affecting students' ability to learn in this curricular area?

How willing is our school to change and improve?

How do we share with each other what we have learned in professional development activities?

TIPS:

- Consider using a jigsaw technique to make the rest of the staff aware of and knowledgeable about the curricular criterion and the framework.
- Consider using videos, such as those provided by ETN* and CLAS,** related to your in-depth curricular area for making staff aware of new kinds of student work, assessment, and so forth.
- If your school is a year-round school, consider using a 12-month time line. (See the sample time line for a year-round school on pages 277–279.)

*To purchase a videotape, contact Educational Telecommunications Network, Los Angeles County Office of Education, 9300 E. Imperial Hwy., Rm. 260, Downey, CA 90242, Attn: Ben Alarcon; (310) 922-1650.

**Information about videotapes for loan and supporting materials on the new California Learning Assessment System can be obtained by contacting the California Learning Assessment System, California Department of Education, P.O. Box 944272, Sacramento, CA 94244-2720; (916) 657-3011.

Scenario

September, 1992

After reviewing the Science Framework, *the science criterion, and* It's Elementary!, *the leadership team's members have a better feeling for what the students should be doing in our school and a good idea of what their science work should look like. We have the "ideal" in mind for our school of a high-quality science program that is student-centered and activity-based, and this "vision" with which to compare our program is starting to form. After attending the two-day PQR training, during which time we were able to talk with teachers from other schools whose focus is also science, we have a clearer vision of what the framework is all about. We participated in activities that familiarized us with not only a thinking, meaning-centered curriculum and the quality criterion but also the self-review process. It was interesting to talk with folks from other schools. Many chose science for the same reasons we did. Not only did the training provide us with information and strategies, but perhaps more importantly, it also fostered a local network of school faculty interested in improving student learning in science. Looking at a sample of our own student work in science during training was especially helpful in getting started.*

We were also delighted to meet our consultants at this training. One consultant is a science teacher at an elementary school in a neighboring district which belongs to our PQR consortium. This school will be focusing on science in its PQR this year as well. The other consultant is a mentor teacher in that same district who has been involved with CSIN for three years. Between the two individuals, we feel confident that we will be exposed to new ideas about science teaching and learning at the elementary level and that these new "critical friends" will help us build on what we have at our school to significantly improve the work our students do in science.

Following the training, we returned to school to plan how we will conduct our PQR. We talked about how to involve the rest of the staff, how to collect student work and schedule our classroom observations, and at what stages we might profit most by the involvement of our consultants. Once we determined what needed to be done during the year, we created a time line for getting it done.

Curriculum Self-Review Process

This section describes the work of the leadership team in conducting the curriculum self-review process. Portions of the scenario follow each procedure.

7. Gather information and data about the nature and quality of work your students are doing in your area of focus and the features of the program which foster this work.

The staff most directly responsible for the selected curricular area and/or members of the leadership team are likely to have the most responsibility for gathering and reviewing student work, but the collaboration of everyone ensures a more comprehensive review. As you take an in-depth look at the curricular area you selected, you may want to look at student work in other subjects which relate to it. For example, if language arts is the selected area, you may want to look at student writing across the curriculum.

In focusing on student work, it is important to review both student work (products) and students working (performance). Therefore, in addition to reviewing students' written work, it is just as important to observe students working in the classroom as well as in other school settings, such as the computer lab or library media center. It is also useful for the leadership team to interview staff and students about their attitudes toward and perceptions of what is going on in the school, and particularly what students are working on and producing.

One challenge to be addressed is how to collect and analyze work representative of *all* students in the school— including students who are developing English-language proficiency and those who have special learning needs. As part of this challenge, you will need to make sure that student work is collected and analyzed for students who are receiving instruction in their primary languages.

> ***"The threat (from outsiders coming in on a one-time-only basis) has been lifted and a true self-review approach is occurring with three key questions being addressed: First, what should students know and demonstrate? Second, how will they learn those things? Third, how will we know they have learned?"***
>
> —from a principal

You will need to make some decisions about what kinds of work you will collect. Student learning can be reflected in a variety of ways, including both student work and students working. A few examples of each are provided below. Refer also to the curricular criterion for specific descriptors of student work or students working in your selected area of focus.

Some samples of student work and the form in which it is collected might include:

- Essays
- Journals
- Reports
- Portfolios
- Written responses
- Project products

Some examples of students working might include:

- Making oral presentations
- Discussing ideas
- Role playing
- Doing individual and group work
- Conducting investigations
- Performing hands-on activities
- Engaging in library and other types of research

"Remember, some students can write, but there are other ways to look at student work. Students can show you, produce a product or model, do a dramatic presentation, create a video. Students can tell you in interviews. And we have anecdotal notes."

—from a leadership team member

TIPS:

- When collecting student work, collect work that all teachers agree is representative of *all* the students.
- One way to collect student work is to have teachers collect all student work related to a given subject area on given days. Another way is to have teachers meet by grade level to discuss student portfolios and select work representative of *all* students. The work is then given to the leadership team.
- If you collect samples of only student work from the students who are on track at a given time in a year-round school, you can still collect work from *all* students by lengthening your self-review period. A six-month period should be sufficient. Starting as early as possible helps.

The following sections suggest various techniques and considerations for collecting work and making observations. Remember that at the elementary level, the work you collect and observe may not always be the work resulting from efforts in your in-depth area. You may see work from that area integrated into many lessons across the curriculum.

Observations

You should observe students individually (e.g., writing, making oral presentations) and in groups (e.g., group discussions or projects). The primary focus should be students' performance—what they can do, how they proceed, and how well they do it. During the curriculum self-review process, it is strongly recommended that all classrooms be visited. Students should also be observed in other settings, such as the library media center, auditorium, and computer lab, to see what they are doing and producing.

Use the "Student Work" section in the curricular criterion to assist you in determining what to look for during the classroom observations. While observing the students, you need to focus primarily on what the students are doing and learning. Of course, the role of the teacher in facilitating the students' learning experiences is important to observe as well. Additional areas of focus may include availability of materials and use of technology.

> ***"Focusing on student work led to much more communication. At first some teachers just turned in good student work, but once a level of trust was established, the teachers began turning in a variety of work showing all levels of student success."***
>
> **—from a teacher on a leadership team**

Some guidelines you may want to use in observing what students are doing and producing include:

- What student-centered activities are occurring
- What collaborative work projects students are carrying out
- What books, documents, and/or materials the students are using
- What technology the students are using

Your leadership team develops the structure for managing the observations and collecting the information to best serve the needs of the overall self-review and the particular needs related to the in-depth area. The structure includes which classes will be observed, what follow-up observations are needed in the in-depth area, and how to take notes to document what is observed.

Observation documents may be the notes teachers make in their everyday work with students; that is, the cues in students' language and behavior which signal their interests, their thinking, and their connections. Rating forms, narrative descriptions, checklists, logs, teachers' journals, and anecdotes have all been used as evidence of students working. In addition to the leadership team's observations, it would be helpful to review observation notes made by teachers (who may not be on the leadership team) as part of the ongoing assessment of students' work and their performance as well as students' research journals.

TIPS:

- After an observation, consider writing a brief anecdote describing the kinds of learning happening in that classroom. After observations are completed, your teachers might get together to talk about what the students at your school are working on and learning and how these aspects of your school compare to what is described in the framework and the criterion.
- Consider pairing teachers with consultants for some classroom observations so that discussions can occur immediately afterward.
- Consider having teachers observe in their own grade levels as well as in other grade levels. Visiting each other's classroom as part of the curriculum self-review process and discussing these visits is an invaluable eye-opener.
- You may want to schedule observations only when students are working in the in-depth area or on topics linked to the in-depth area.
- Consider videotaping students working on specific tasks or activities as a method of recording what students are doing.

Monitor Growth of Student Learning Over Time

Keep in mind that student learning is ongoing and occurs over a period of time. Therefore, the assessment of student work and learning should include not only the various types and methods listed above but also an analysis of students' work over time.

TIP:

- In order to show growth over time, collect work from the same students three to five times during the year.

Opportunities for Student Self-Assessment

In reviewing student work, you may want to note whether students have opportunities for self-assessment. Students should know what is expected of them, and they should be able to monitor how well they are progressing toward these expectations. Thus, there should be some opportunities built into the curriculum for students to assess their own work. For example, students can assess their ability to make oral presentations by viewing themselves on videotape and rating themselves against rubrics developed jointly by students and teachers. They could also evaluate growth in their ability to write over the course of the year through examination, with the teacher, of their own portfolios.

Interviews of Students

Students can be interviewed individually or in groups to gather information on how and what students are learning, as well as how well they understand and can use what they are learning. Interviews, both formal and informal, validate and expand information gained through review of student work and classroom observation.

The following are some possible questions to ask students during interviews:

- What kinds of projects do you do?
- How often do you work on a project alone?
- What kinds of problems do you solve?
- How often do you solve difficult but interesting problems for which there are often many possible answers?
- How often do you do research in the library and elsewhere with other students?
- Are the resources, such as books and other materials at your school, adequate for your research projects and other activities?
- How often do you talk about what you have just read with a group of students in your class?
- What kinds of oral reports do you give in your class? How often?
- What kinds of work do you put in your portfolio? Why?
- What kinds of homework do you have?
- What ways can you suggest to better show how and what you know?

Interviews of Staff

Teachers, administrators, program coordinators, and library and other personnel at your school can be interviewed about how and what students are learning. Interviews can expand on information gained through review of student work and classroom observation. You may want to include staff who are only part-time or district office staff who visit regularly.

Interviews with and Involvement of Parents and Other Members of the School Community

Parents (or guardians), including members of the SSC, parents of students with special needs, and members of parent advisory committees, also have a role in your self-review. Parents especially can provide information about the extent of their monitoring of their children's work and progress. You may want to prepare a survey and gather information from a random sample of parents. A number of people from community-based organizations and social service agencies, representatives from local businesses and colleges, and other members of the community serve the school or are served by the school, and you may want to involve some of them at some point in your self-review or ongoing planning and implementation.

Scenario

September, 1992–February, 1993

Now we have the "vision" and the work begins. What kinds of work do our students do? What kinds of questions do they ask? What kinds of resources do they use? How would we describe our science program to the leadership team at another school?

Working on a team is wonderful. Using the ideas in this Guide and Criteria for Program Quality Review, Elementary, *we each took a look at various aspects of our program and brought our findings back to the leadership team meetings.*

A few leadership team members and parents chose to interview students. We were encouraged to spend time in other teachers' classes and, through the "purchase" of time from a roving substitute, were released for short periods of time to make these visits. I spent a morning in my friend's third-grade class that I never had time to see before. It was wonderful to see her working with students and a joy to work alongside her as I learned more about our school. I also had an opportunity later in the day to ask my friend some questions about how she taught science.

At several meetings of the leadership team, we reviewed a collection of student work in science, just as we had practiced during the two-day training. Only a few teachers have students keeping journals, and fewer are keeping portfolios. Some teachers have students create science projects, but these are usually assigned only once a year in preparation for the school science fair. Little time is spent in activity-based lessons. Most of the students' work was about plants, animals, and astronomy, and most of the content was not connected to bigger ideas or themes. There was no evidence of students selecting literature about or by famous scientists. Classroom observations revealed that most students worked individually, and occasional *hands-on science activities had been observed. None of us had seen any oral reports given. In fact, only a few written lab reports were collected as part of our samples of student work, and these were all from the same classroom. Copies of some of the tests we saw consisted mostly of multiple-choice, true-false, and matching questions.*

By examining students working and the work they produce, we were able to make some generalizations about our program. We were beginning to compare ourselves with our "vision."

8. Compare the work your students are doing and producing with the vision set forth in the frameworks and the "Student Work" section of the curricular quality criterion regarding what students ought to be doing and producing, and develop a student work summary.

Once you have a collection of the work your students are doing and have observed students working in your school, you will need to compare, discuss, analyze, and synthesize the information in relation to the framework and to the curricular criterion. A student work summary will ultimately be developed. Throughout this process, many questions will arise for discussion. It is through these conversations over the nature and quality of student work that your school begins to come to its decisions for specific improvements.

To assist the leadership team and the school staff in examining and analyzing student work, you may find it helpful to develop a set of essential questions. The intent of essential questions is to get to the heart of what students are learning by examining their work. Critical features of work to examine include the nature and type of work, the quality of work, and the frequency with which students are producing specific types of work of specific quality.

How do you know what the nature, quality, and frequency of work should be? First, look at documents such as *It's Elementary!* which address the overall vision of students at the elementary level and which stress concepts of the thinking, meaning-centered curriculum. Second, begin to examine materials more specific to the curricular area, such as the framework and the PQR curricular quality criterion. The "Student Work" section in the curricular criterion should be helpful in (1) pinpointing types of student work that are described in the framework; (2) diagnosing why there may be differences between the existing student work at the school and that which is described in the framework; and (3) leading the school faculty to look more closely at the framework and supporting curricular documents to gain insight into what could be changed about their program.

What are good essential questions? They can be both general and specific to the curricular area. They are probing questions that start conversations about what students are learning and doing. They are questions that focus on student learning, rather than teachers teaching. A good stem to begin with is: What evidence do we have that students are . . . ?

Examples of general essential questions that apply to the various curricular areas:

What evidence do we have that students are actively involved in constructing their own meaning?

What evidence do we have that students are adapting their learning to new situations in the real world?

What evidence do we have that students are making inferences, researching ideas, and experimenting?

What evidence do we have that, when solving problems, students are considering a variety of approaches and selecting the most efficient?

What evidence do we have that students are making sense of new information by connecting it to what they know or have experienced?

Samples of essential questions that apply to specific curricular areas:

What evidence do we have that student work demonstrates the connections students are making between history and personal experiences?

What evidence do we have that students, in their writing, are responding to literature representative of a variety of genres and cultural perspectives?

What evidence do we have that students are working on mathematics investigations which are complex and which more often than not have multiple solutions?

What evidence do we have that students are working on mathematics tasks which are accessible to *all* students and which can be investigated at many different levels?

What evidence do we have that students' science work *each year* represents a balanced treatment of earth, life, and physical science?

"Encouraging staff to talk among themselves about their findings was really important. When teachers presented the information to each other, it was more effective. . . . Even tracks got together when I (the principal) got out of the way."

—from a principal

> What evidence do we have that students are making connections between science concepts taught in the classroom and natural phenomena in their own lives?

Your leadership team will need to develop its own strategy with which to analyze student work across the school and compare that work to the vision set forth in the frameworks and quality criteria. Using essential questions to guide the analysis may help but is by no means the only strategy. Whatever the strategy, the entire quality criterion should be addressed, since this reflects the framework as a whole.

You may want to consider getting help from your consultants and/or other outside curriculum experts during this part of the self-review process. Your consultants may be able to assist your leadership team and school staff in devising strategies for analyzing student work; perhaps they have some of their own students' work to share with you.

TIPS:

- Schedule sufficient time for the leadership team to engage in conversations with the school staff so that a high level of trust is established among the faculty.
- Suggest that consultants ask questions which cause teachers to reflect on the degree to which the frameworks are being implemented in the classrooms of the entire school staff.
- Have the staff meet by grade levels to discuss the emerging performance standards being set by the education professions and to begin discussing how the work produced by students in the school may be similar to or different from the work described in these standards.
- In analyzing students' work in their primary languages, you may want to ask teachers, teachers' aides, bilingual consultants, and parents in the school community who speak the languages to assist you.
- Consider paying stipends to off-track teachers in a year-round school to come back for periodic meetings to discuss student work.

Student Work Summary

PRODUCT: Prepare a brief written summary (approximately 3 to 5 pages) of how your student work compares to that set forth in the curricular quality criterion you have selected and the respective framework. (See pages 280–284 for sample student work summaries.)

The summary of student work is a description of your students' work and performance and how they compare with work and performance described in the framework and curricular criterion. It may include conclusions that you have drawn during your analysis of student work. Because some schools may bring consultants into the schools at the early stages of their analysis of student work and other schools may have them come at a later stage in the process, the student work summary may at first represent a partial analysis of student work that later becomes more complete and tied to specific improvement activities as a result of work with the consultants.

Examples of Questions to Ask About the Student Work Summary:

Does the student work summary describe what students are doing or producing rather than what teachers are doing or what the educational program does?

Does the summary describe what the students are doing in relationship to the framework?

Does the summary describe student work that is representative of *all* the students in the school?

Does the summary reflect an analysis of the entire curricular criterion?

Does the summary include statements that summarize your descriptions of student work?

Does the summary reflect an honest and thought-provoking self-review of student learning?

Does the summary provide sufficient information to assist you in developing the improvement plan?

As you summarize your findings about student work, keep in mind that this activity provides an excellent opportunity to continue communication with the school site council. Results of the summary can be used to generate discussion and ideas from which the leadership team can begin to draft the improvement plan. Sharing the student work summary with the SSC can pave the way for a continued dialogue with the SSC about the improvement plan and the eventual incorporation of the improvement plan into the school plan.

TIPS:

- Your school can benefit by involving as many people as possible in generating the student work summary. Consider breaking teachers into small groups to first examine the student work, and then bring them together as a whole group to develop the student work summary.
- The format of the student work summary is less important than the depth of thinking and degree of consensus associated with it, both of which are necessary to complete this part of the curricular self-review.

Scenario

December, 1992–March, 1993

Just before the holidays, we realized that we needed assistance in focusing our conversations on student work and comparing it to that which is described in the framework and the science curricular criterion. We therefore requested that our two consultants visit our school for one day in early January. Prior to their visit, we talked with them on the telephone about two things: (1) we wanted the mentor teacher to model one or two lessons in the classroom(s) that she has been using as a result of her involvement in CSIN; and (2) we wanted to keep the discussions about our students' work constructive and positive during the visit. We did not want to focus solely on what was not happening in science at our school but rather on what we have to do to improve science teaching and learning at our school.

During their day at our school, both consultants observed some science teaching, and then the mentor teacher modeled two thematic lessons for us in two different classrooms. We videotaped the lessons so we could all see firsthand how to teach these thematic lessons in our classrooms. The consultants also looked at some of the work we collected and talked throughout the day to teachers and other members of the staff. After school, the leadership team and all the science teachers met to discuss her observations and to allow time for us to ask questions about the two lessons we observed being taught and compare them to the initial thoughts we had already begun to articulate. Members of the leadership team who were less knowledgeable about science instruction asked questions or continued discussions begun earlier in the day.

Finally, this time also provided an opportunity for us to work collaboratively with our consultants to outline several essential questions that would guide our continuing discussions about student work.

During February and March, we continued to make comparisons and to draft some summary findings on paper. In March, some of us met two days after school with our district science specialist to prepare our summary of how the students' work compares with that set forth in the framework and curricular criterion. Some of the differences we identified were (1) limited small-group work in science; (2) few hands-on science activities; (3) little work in physical and earth science; (4) few science projects; (5) tests that are mostly multiple-choice, matching, and true-false; (6) little articulation between grades or staff members; and (7) few connections being made in our science program—connections to real-life problems or even connections among ideas taught in succeeding lessons. For some time, our school has had in place a "scope and sequence," and most seem to follow it. However, some teach only their favorite subjects. A student could leave this school and have only learned about bean seeds, dinosaurs, planets, and endangered species. We need a science program that stresses the connections among the disciplines of the physical, earth, and life sciences and that articulates with our middle school. During the discussions we had with the district science specialist, we were able to agree on which differences we wanted to focus on first and which would require more thought and planning on our part and possibly greater knowledge about teaching and learning in science.

Those identified or targeted differences were explained more fully to the entire staff and brought to the attention of the SSC as well. Finally, to maintain contact and continuity with our consultants, and to prepare for subsequent work on our improvement plan, we decided to send each of them a copy of the following completed student work summary.

Summary of Student Work in Science at Einstein Elementary School

Specific information about what our students work on, how they work, and what they produce as a result of our science program was gathered by classroom observation, interviews with teachers, parents, and students, and examination of student work. Substantial evidence was found to convince us that the work our students are doing and, in our opinion, the body of knowledge they are acquiring, are substantially different from those described in the framework and the science quality criterion. At the same time, we felt confident enough and energetic enough that, with some outside help, we could eventually redesign our program to produce the type of student work and performance envisioned in the Science Framework *and in such documents as* It's Elementary!

The results of our analyses of what our students are working on and producing are as follows:

Result 1. Student work reflects mostly one science discipline (life science) and is filled with content gaps.

Student work, classroom observations, and interviews revealed that:

- *The students' work relates to some of the same science topics year after year.*
- *Students study mostly life science, little earth science, and virtually no physical science.*
- *Students are not exposed to some major concepts in any grade.*

Result 2. Student work and student interviews show little evidence that students connect new learnings to prior learning, or that they connect their learnings to real-life problems.

Student interviews revealed that:

- *Students do not see connections among ideas taught in succeeding lessons or among the various science activities in which they are engaged.*
- *Student learning from prior years is not deepened throughout the elementary years.*

Classroom observation showed that:

- *Students do little brainstorming before activities in science and other subject areas; charting of students' ideas is done* after *or* during *activities but not usually before.*

- *Students make few connections between science in the classroom and science in real life.*
- *Students learn science as a separate subject without connection to other curricular areas.*

Result 3. Students generally work alone in science in teacher-directed lessons.

Student work revealed:

- *Students are engaged in few activity-based lessons.*
- *Students write few lab reports and rarely collect data.*
- *Students are given some fill-in-the-blank worksheets to complete.*

Classroom observation showed:

- *Students mostly listen to teacher-directed instruction.*
- *Students occasionally work in small groups for science.*
- *Students do not talk much about science activities.*

Student interviews revealed that:

- *If students do projects, they generally do them only once a year.*
- *Students rarely do research together.*

Result 4. Students are assessed in traditional ways: short-answer, multiple-choice, matching, and objective one-right-answer tests.

Student work revealed that:

- *Student work is rarely kept over a long period of time.*

Classroom observations showed that:

- *Students are mostly given paper-and-pencil tests.*
- *Students are mostly asked to respond to multiple-choice, matching, and true-false questions.*

9. Discuss and make choices about what you are going to do to improve the program and, consequently, the nature and quality of student work in your selected curricular area.

Once you have taken a look at your students' work and identified the differences in the program on which to focus, you then need to discuss what could be changed in the curriculum and instructional program to enable your students to acquire the knowledge and perform the types of student work described in the framework and curricular criterion.

It is important to realize that improvement strategies may differ among different curricular areas of focus. For example, a school which chooses science may realize that its best opportunity to improve its program may come from a significant investment in science materials and planning time, coupled with restructuring of the school week to allow for larger blocks of uninterrupted time for teaching activity-based science. In contrast, a school choosing language arts may decide that it has sufficient materials but that what it needs most is sufficient planning time so that teachers can redesign and resequence their lessons to take advantage of the natural connections across disciplines. Finally, a school which selects mathematics may realize that the only way to resolve the mismatch between work students currently do and the type of work called for in the new framework is to replace the existing materials and courses of study with new units and materials. This type of school would invest heavily in release time, professional development, and planning activities, which are all necessary to implement new materials and lessons.

A close analysis of both the "Professional Practices" section of the curricular criterion and the instructional support criteria might help your school figure out what to change in curriculum and instruction and how you might change the way you do business in your school in order to improve student learning.

Curricular Criterion—"Professional Practices" Section

The "Professional Practices" section of each curricular criterion includes discipline-specific information about what teachers who, as professionals serious about the quality of teaching and learning, do on a regular basis to make improvements. Professional practices are typically described in terms of:

- Instruction and assessment practices
- Ongoing professional development activities
- Allocation of resources for improvement

Instructional Support Criteria

Four instructional support criteria are relevant to the elementary level:

- **The Teaching and Learning in the Elementary Grades** criterion describes the most important characteristics of schooling in the elementary grades. This criterion thus reflects the relevant information conveyed in *It's Elementary!* (NOTE: Another instructional support criterion is available for the middle level, **Teaching and Learning at the Middle Level.**)

- The **Learning Environment** criterion emphasizes the need for high academic standards and the importance of making sure that *every* student in the school succeeds in a rich, meaning-centered, thinking curriculum. It outlines the type of early intervention and support that students may need to succeed in this curriculum.
- The **Improvement Process** criterion assists the school in the process of self-examination and self-improvement by describing (1) the need for a thoughtful, meaningful, and rigorous assessment of what and how students are learning in comparison to what and how they should be learning; (2) how teachers and other members of the school community can work more closely together; (3) how a strong commitment to providing professional development can foster improvement in teaching and learning; and (4) how the school's supplementary resources can be allocated to bring about the desired changes in curriculum and instruction.
- The **Teaching and Learning for Second-Language Learners** criterion provides the school with strategies to use in analyzing student work and in developing their improvement plans to increase the level of learning of second-language learners in the core curriculum and provide appropriate instructional services to meet these students' learning and language needs.

In essence, these four criteria bring together the various standards for effective instructional practices. Your school might look at the effect each key idea in the instructional support criteria has on student work. For example, the leadership team could talk about such issues as grouping practices, high expectations, interdisciplinary teaching, use of technology and the library media center, parent involvement, services for special needs students, and instructional needs of second-language learners as these issues relate to improving the curricular area of focus. The instructional support criteria can be used when you are preparing the student work summary and the improvement plan. The most important point is that, in the curriculum self-review, your school analyzes the criteria carefully and decides what issues addressed in the criteria are relevant to your interests in improving curriculum and instruction in the focus area and then analyze these issues in developing strategies for improvement. Your school can use the instructional support criteria as important resources for addressing what you might do differently to eliminate the differences between the vision set forth in the framework and the operation of the program at your school. Consultants may find both the "Professional Practices" section of the curricular criterion and these instructional support criteria helpful for identifying improvement ideas to discuss with the leadership team.

Additionally, you may want to consider becoming a member of the new California Alliance for Elementary Education, in order to network with other elementary schools in your region and glean ideas for improving your program. Pages 305–308 contain information about the Alliance.

Scenario

March–May, 1993

In March, our leadership team began to look very closely at both the science criterion and the instructional support criteria to help us arrive at some of the changes we might make in our science program and the way we plan for, organize, and teach science in our school. It was at this point that we decided to request some help from our consultants.

The two consultants sat down with us for one day at the beginning of April to help us sift through all of the information we had so far. They helped us answer the questions, "How are we going to improve our students' work in science so that it compares more favorably with the work described in the Science Framework*?" and "Where do we start thinking about this complex problem?" Keeping in mind the differences we had started to identify and the key ideas set forth in the "Professional Practices" section of the science criterion and the instructional support criteria, they asked us the following questions: "How are the strategies in the framework for teaching and learning science reflected in our current program? How many of us are familiar with new forms of authentic assessment? How much exposure have we had to the new science materials being developed? Which of our staff would enjoy and be most likely to profit from substantial professional development in science commencing this summer? How much time do we spend as a staff discussing appropriate science concepts for each grade level? What adaptation, if any, needs to be made to teach low- and high-achieving students so that all students will benefit from science instruction? In what ways could technology and the library media be used to offer our students a more powerful science learning situation? What efforts have we made to alert parents about the students' understanding of the science content? Do we always take the time to find out our students' prior knowledge in science to be aware of their preconceptions and misconceptions?" (This last question was especially intriguing to us because the students in our school come from such different cultural and language backgrounds and have had such different experiences outside of school.) Many of these topics were best introduced by our consultants—people outside our "family." Their presence added objectivity to the types of conversations we had been having this year.*

The leadership team and science teachers then met another time with our two consultants and with our district science specialist in early May to help make some choices about what to change in our science program. As part of this, we discussed where we wanted to be, and then, all three people helped us figure out some strategies and activities for how to get there. For example, we knew we wanted to follow the recommendation from the framework of engaging students in hands-on activities at least 40 percent of the time. This means, of course, that we will need to purchase more materials for the students. We also would like for our teachers to work together to develop a program elements matrix and begin a content matrix (see Chapter 7 in the framework). We want to establish a "teacher leader" for science in our school who would chair the group of teachers who would develop these two matrixes, as well as planning some small-group work. This person could be our science mentor. We also would like to try some new forms of assessment that are more hands-on. Finally, we know that we want to do a better job of identifying our students' prior knowledge so that it acts as a base upon which to add new knowledge and concepts. Exemplars in the Teaching and Learning in the Elementary Grades criterion suggest that we "close this gap" by posing open-ended questions and challenging students' preconceptions. This will require us to do more brainstorming and discussion prior to an activity.

Other exemplars in the instructional support criteria will also provide ideas to help us "close our gaps." Our students need to study science issues that impact their daily lives, work much more doing group projects, and have their work analyzed through portfolios.

We spent many hours discussing other ideas in the instructional support criteria (e.g., parents as partners), and have incorporated some of these ideas into our improvement plan. We think we have the solution—now we just need to do it!

In order to accomplish these things, we discovered that we needed to work more closely with the district curriculum specialist and contact the California Science Project (CSP) and California Science Implementation Network (CSIN) for new ideas and ongoing professional development. We need to identify who will be sent to the CSP and CSIN and how to get those teachers there. We also needed to contact two units in the California Department of Education for information. We will call the Science and Environmental Education Unit for model curriculum modules/units based on a conceptual and thematic approach to teaching science and for assistance with the newly adopted instructional materials available. We have decided not to purchase new materials until we have a better picture of what we want. We will also contact the California Learning Assessment System (CLAS) for model science performance tasks, open-ended questions, and ideas for portfolios. We might even borrow some Education Telecommunications Network (ETN)/CLAS videos from our county office of education to get ideas. Professional books, journals, and searches of electronic data bases in our district and county office professional libraries should provide useful information.

10. Develop a multiyear improvement plan, incorporate the activities into your school plan, and report to the community.

Your leadership team, in collaboration with other school staff and consultants, is responsible for developing an improvement plan which discusses and proposes changes in curriculum, instruction, and instructional support you feel are necessary to bring about significant change in student work. Likely activities that result in improvement include ongoing professional development for staff, consultation with curriculum experts, networking with other schools, revision of schedules for instructional time, renewed parent involvement efforts, and use of available resources. In most cases schools will find that it will require more than a single year to implement all of the strategies in the improvement plan.

One of the major tasks associated with "getting started" in planning is to determine how the SSC and the leadership team will interact and how the improvement plan will be tied to the school plan and budget developed by the SSC. Since both the leadership team and the SSC are to focus on developing improvement strategies, it is important that they are supportive of each other and work together to develop a single comprehensive approach for school improvement.

While there is no required format for the improvement plan, it should be compatible with the school plan developed by the SSC. This compatibility will better ensure that the various improvement efforts are coordinated and will assist in the monitoring of the implementation of the planned changes.

Your school and district should agree on a schedule for periodically reporting to the governing board and school community on the status of the PQR and the implementation of its improvement plan.

> ***"An important difference from past 'action plans' is that improvement strategies are better connected to what's happening in the classroom. Also, narrowing to one area means that the plan is no longer a broad wish list. What's in the plan is likely to actually happen!"***
>
> —from a leadership team member

Improvement Plan

PRODUCT: Prepare a written improvement plan (approximately 3 to 5 pages). (See pages 285–293 for sample formats.)

It is important that your school staff think carefully and creatively about the feasibility of implementing and funding certain strategies you choose to pursue to improve student learning in the curricular area you have selected for emphasis. With an emphasis on strategy, think about such topics as the preparation of staff within your school to deliver a thinking curriculum and how instructional time is used within the school day. In addition, you need to be realistic about the resources of your district and the nature and extent of help you can expect from your district, county, and consortium or co-op in pursuing your improvement activities. The consultants will want to know why you chose the specific changes in curriculum, instruction, and instructional support and how and when you plan to bring about the improvements you envision.

Your improvement plan does not need to be long (approximately 3 to 5 pages), and it can be prepared in a format that is practical for your school. The content of your improvement plan should include a brief rationale for why you selected your in-depth curricular area. Identify the findings about the nature and quality of your students' work and the program, where you want to be in light of the vision set forth in the frameworks and the quality criteria, and activities for how you plan to get there. Also, indicate the year(s) when these activities will be implemented and, where known, the funding sources.

TIPS:

- After developing your improvement strategies, prioritize them so that you will actually complete a small number of very important activities. Avoid including a broad wish list in your improvement plan.
- Use your consultants to help you decide what are the most essential activities to include in your plan; i.e., those that will result in *real* change in student work at your school.

Scenario

May, 1993

At this point we were fortunate to have captured the interest and energy of other teachers at our school, who became involved voluntarily with the process and attended our leadership meetings. (Of course, we discussed ideas from all drafts of the improvement plan with the entire staff.) We decided to focus on four "gaps" for 1993–94.

Through a series of leadership team meetings, we drafted the plan on butcher paper working as a group. Constant revisions and edits did not make our secretary very happy, but we are happy with our plan so far. We know it is our plan, and we can change it as we see fit. It will be shared with the community in our end-of-year newsletter sent home to parents soon after the SSC and governing board read and discuss it.

In the first year of our three-year concept, we will focus on redefining the content of what we want to teach in science and sending at least one teacher to CSIN to learn *hands-on activities embedded in conceptual units in support of this new content. This is when we will begin developing our program elements matrix and our content matrix. We plan to use Eisenhower funds for release time in 1993–94 to develop the content matrixes and lesson plans, a portion of SIP funds to purchase some hands-on science materials, and Chapter 1 funds for professional development. We are able to justify the use of Chapter 1 funds because all our regular classroom teachers work with Chapter 1 students.*

The district SIP coordinator sat in on our last meeting and provided a great deal of pertinent input on the draft of our plan. She is pleased with the plan and glad we decided not to change everything the first year.

Our consultants also joined us in our last meeting in the third week of May. Their advice and resources helped us decide on realistic change strategies and finalize our improvement plan. Their facilitation of our process was very beneficial.

One of our first steps toward incorporating the improvement plan into the school plan took place when we were getting organized for our PQR. We contacted our SSC and arranged to meet with them to discuss the existing school plan and how best to integrate our research and findings into the ongoing planning process and how we could best incorporate the improvement plan that would result from our efforts into the existing school plan. The result of our discussions was a decision that time would be set aside at each meeting of the SSC for one or more members of the leadership team to present a status report on the self-review and seek input from the SSC. The purpose of this meeting was to ensure that the two planning efforts and bodies were supportive of each other and that the SSC would reserve a portion of the funds to finance the improvement effort in the selected curricular area, which in our case turned out to be science.

These ongoing meetings proved very valuable in enabling the SSC to judge the magnitude of improvement strategies that were being discussed and to adjust its total budget in a manner that could provide support for new strategies and still provide needed assistance in other areas of the school's program.

Early on it was decided that the improvement plan that would result from the PQR would be treated as an addendum to the school plan developed by the SSC. We would then have the advantage of being part of the SSC plan while also following a plan format that we developed ourselves and that we feel is better suited to monitoring the strategies that we will implement over the next few years. We also understand that if the adopted format does not prove successful, it may be altered or completely revised to make it more useful for obtaining the desired improvements in our science program.

One of our major goals in conducting the self-review and developing the improvement plan is to ensure that the improvement effort is not conducted in isolation. To prevent this from occurring, we agreed at the first meeting that we would establish and maintain a continual dialogue with the school community.

By reporting to the school district and parents of the school on a regular basis, we were successful in keeping them informed of our efforts and were able to obtain reactions from them regarding the changes that were being discussed. This dialogue enabled us to adjust our proposals so that no one was taken by surprise and, thus, increased the community's support of the improvement plan for our school's new direction.

SCENARIO: EINSTEIN ELEMENTARY SCHOOL'S IMPROVEMENT PLAN FOR SCIENCE

Rationale for Selecting Science

Einsein Elementary chose science as an in-depth area of focus for our curriculum self-review because the staff felt, after a preliminary look at student work, that improvement in our science program was essential. Many staff members wanted to focus on science to become more knowledgeable about implementing the new framework and to help them make decisions about what newly adopted materials to purchase. We have heard about the 1990, 1991, and 1992 field testing of performance-based tasks in science conducted by the California Learning Assessment System, and want to become involved with and more knowledgeable about these tests, which we believe will affect our school in the near future. Over the course of several faculty meetings, SSC meetings, and leadership team meetings, our entire school community decided to focus on science improvement for the next several years.

EINSTEIN ELEMENTARY SCHOOL'S IMPROVEMENT PLAN FOR SCIENCE

FINDINGS	WHERE WE WANT TO BE	ACTIVITIES TO GET WHERE WE WANT TO BE		
		1993-94	1994-95	FUTURE YEARS
WHAT WE TEACH Student work, classroom observations, and interviews revealed that: • Some science topics are repeated year after year. • Mostly life science is taught; little attention is given to earth science or physical science. • Some major science concepts are not addressed in any grade. • There is little articulation between grades or among team members.	1. We want a balanced science program in terms of life, earth, and physical science, with no major content gaps. 2. We want to teach major concepts in depth. 3. We want to incorporate themes into our curriculum to connect concepts. 4. We want our program to be articulated with that of our local middle school, with concepts addressed over several years, as developmentally appropriate.	1. Join the California Science Implementation Network (CSIN). 2. Begin developing a science program elements matrix and a content matrix (see *Science Framework*): • Plan School-Based Coordination Program (SBCP) noninstructional days to allow staff time to develop matrixes. • Use Eisenhower funds to purchase a few days of consultation with a curriculum specialist from a nearby district who has attended California science project institutes. 3. Use some Chapter 1 funds for a roving substitute, allowing more planning time for our teachers, who all deal with Chapter 1 students.	1. Continue alliance with CSIN. 2. Continue development and revision of the matrixes. 3. Start development of lessons and conceptual units of study that use themes to connect important ideas of science.	→ → →

EINSTEIN ELEMENTARY SCHOOL'S IMPROVEMENT PLAN FOR SCIENCE

FINDINGS	WHERE WE WANT TO BE	ACTIVITIES TO GET WHERE WE WANT TO BE		
		1993-94	1994-95	FUTURE YEARS
HOW STUDENTS ACQUIRE SCIENCE KNOWLEDGE Student interviews revealed that: • Students do not see connections among ideas taught in succeeding lessons or among the various science activities in which they are engaged. • Learning from prior years is not deepened throughout the elementary years. Observation showed that: • Little brainstorming is done before activities are conducted in science and other subject areas. • Few connections are taught in the classroom between science and real-life problems. • Science is usually taught in *isolation*, as a separate subject area, without connection to other curricular areas.	1. We want to teach thematically and conceptually—teach conceptual units with story lines so that students can make connections. 2. We want to relate science to other subject areas throughout interdisciplinary units so that students can learn to apply acquired knowledge and concepts. 3. We want teachers to identify students' prior knowledge so that it can serve as a base upon which to add new knowledge and concepts.	1. Contact the Science Unit in the California Department of Education for models of thematic and conceptual units and for assistance with the newly adopted instructional materials. 2. Read and discuss *Meaning Makers*, by Gordon Wells, and other relevant documents on constructivist learning. 3. Work on content matrixes. → 4. Order a copy of *Literature for Science and Mathematics (K–12)*, from the California Department of Education. → 5. Seek professional development through the California Science Project and California Science Implementation Network. →	Develop lessons that build on recommended science literature; teach writing as a process in the context of teaching science. →	

EINSTEIN ELEMENTARY SCHOOL'S IMPROVEMENT PLAN FOR SCIENCE

FINDINGS	WHERE WE WANT TO BE	ACTIVITIES TO GET WHERE WE WANT TO BE		
		1993-94	1994-95	FUTURE YEARS
WHAT SCIENCE INSTRUCTION IS LIKE Student work revealed: • Few activity-based lessons • Few lab reports or collected data • Some fill-in-the-blank worksheets Observation showed: • Mostly teacher-directed instruction • Limited small-group work in science • Not much talk among students about science activities Student interviews revealed that: • If students do projects, they generally do them only once a year. • Students rarely do research together.	To meet the needs of our increasingly diverse population we want to have: 1. Minimum of 40 percent of time spent in activity-based learning 2. Increased use of science thinking processes 3. Variety of materials used 4. Student-centered learning 5. Increased group/collaborative work 6. Increased inquiry and investigations; curiosity and enthusiasm expressed 7. Several long-term projects done individually and collaboratively each year	1. Work with the district curriculum specialist to: a. Acquire ideas for how to encourage students to think, communicate their thoughts, and share their reasoning with others. b. Ensure that the hands-on activities will engage students in the science thinking processes and that the activities are balanced in the life, earth, and physical sciences. 2. Involve more parents.		
		a. Call on them to help with equipment and materials in class activities. →	→	→
		b. Prepare and send home science activity sheets that parents can help their children do at home. 3. Serve on the district's science adoption committee to make sure we adopt materials that are activity-based.		
		4. Use some SIP money to purchase hands-on science materials—hand lenses, balances, litmus paper, probeware. →	Begin holding occasional planning meetings with faculty from the local middle school. → →	→ →

EINSTEIN ELEMENTARY SCHOOL'S IMPROVEMENT PLAN FOR SCIENCE

FINDINGS	WHERE WE WANT TO BE	ACTIVITIES TO GET WHERE WE WANT TO BE		
		1993-94	1994-95	FUTURE YEARS
HOW WE ASSESS SCIENCE Student work revealed that: • Student work is rarely kept over a long period of time. Classroom observation revealed that: • Testing in most classes is a quiet paper-and-pencil activity. • Testing is mostly objective (multiple-choice, matching, and true-false questions).	We want: • Students to self-select work for portfolios, which are kept for months, a year, or perhaps multiple years • No qualitative difference between assessment activities and instructional activities • A variety of assessment methods to be used (e.g., open-ended/free-response questions, performance tasks, student verbalizations)	1. Read journal articles and documents on authentic assessment (including portfolio and performance-based assessment).	→	→
		2. Contact the California Learning Assessment System (CLAS) in the CDE and our county office of education.		
		3. Contact schools that have participated in science field tests for information about procedures and scoring.	Field-test our own forms of authentic assessment created here on site. →	→
		4. Designate SBCP day and other resources to free up teachers to discuss and make initial changes in science assessment toward more performance-based assessment.	→	→
		5. Ask our local middle school for information and suggestions on more authentic forms of assessment.		

11. Send the PQR Completion Form to the School Improvement Office, California Department of Education, through your district office.

PRODUCT: Provide the requested information on the PQR Completion Form. You must complete this form and send it to the CDE via your district office as notification that your school has completed its PQR.

A copy of the PQR Completion Form appears on the next page.

Scenario

May, 1993

After finalizing our improvement plan, we prepared the PQR Completion Form and the principal signed it. She then made a copy of it for our records and gave the original to our district PQR coordinator, who also signed it and mailed it to the School Improvement Office at the California Department of Education. It's a nice feeling to have completed the PQR process. We look forward to implementing our improvement plan.

CDS CODE														
	County		District					School						

California Department of Education
SCHOOL IMPROVEMENT OFFICE

(916) 657-2930

PQR COMPLETION FORM

County ____________________ District ____________________________

School ____________________________________

Contact Person ____________________________

Telephone ________________________________

CURRICULUM AREA SELECTED FOR REVIEW

Consultants:

1) NAME: ____________________ 2) NAME: ____________________

POSITION: ____________________ POSITION: ____________________

DISTRICT: ____________________ DISTRICT: ____________________

Visitation Dates ____

Date *Student Work Summary* Completed ______________________________

Date *Improvement Plan* Completed ______________________________

We certify that the PQR process (including the development of the improvement plan) has been completed.

____________________________ ____________________
Principal's Signature Date

____________________________ ____________________
District PQR Coordinator's Signature Date

Date PQR *Completion Form* Submitted ______________________________

Mail one copy to:

California Department of Education
School Improvement Office
P.O. Box 944272
Sacramento, CA 94244-2720

Implementation and Follow-up

This section describes the procedures necessary to fully implement your improvement plan and to follow up on the changes made.

12. Continue to work with your school site council (SSC) to allocate categorical resources, as appropriate, for activities in the improvement plan.

Work with your school site council to coordinate the school plan, various sources of funding, and information from your PQR. Without question, time is the major prerequisite for the successful implementation of the school's improvement efforts. Teachers need time away from their teaching responsibilities. Release time, minimum days, and the noninstructional days available for school-based coordinated programs, pupil motivation and maintenance programs, and professional development (SB 1882) are among the options available for setting time aside for meetings. School Improvement Program funding is an excellent source of funds to pay for substitutes to release teachers for planning. In addition, these funds can be used to pay stipends to teachers for additional planning or during summer intersession. Additionally, resources need to be allocated for the purchase of materials and equipment as specified in the improvement plan.

13. Implement your changes, monitor their results, and adjust your improvement activities as necessary.

Although it may seem obvious, implementation does not occur automatically after planning. Systematic and ongoing communication among all participants is critical for the success of the school's planned improvements. In fact, it may be wise to continue to have the same organizational structures in place that were used to develop the self-review and the plan. This means that the principal, the SSC, the leadership team, and the school staff will continue to ensure that the major improvements in the plan are carried out.

Ongoing implementation meetings held weekly, monthly, or quarterly are the most important formal means in the school's structure to achieve the communication described above. Such meetings can accomplish several important functions.

First, they can focus on monitoring who is doing what and the effects of the planned activities on those who are involved (e.g., students, teachers, administrators, staff, parents). By meeting regularly, the staff ensures the efficient and effective coordination of their efforts as well as an appropriate division of labor among all participants.

Second, coordination is particularly important in a school in which several student populations are provided services by the same adults, either within or outside of the classroom (e.g., limited-English-proficient, compensatory education, special education, average, or gifted and talented students). It is essential for this kind of coordination, also known as ongoing planning, to occur on a regular basis to benefit *all* the students and adults at the school.

Third, the time spent in implementation meetings should be devoted to the problem solving that is necessary to carry out the school's planned improvements. The feedback shared by the participants at these meetings can also provide the basis for any necessary modification or corrections that may arise. For those who may feel insecure or uneasy about trying to put new ideas into practice, such meetings should provide both personal and professional support. The meetings, therefore, can be considered part of the ongoing professional development at the school.

Improvements require a *substantial amount of time* for adults at the school to plan together, to share with each other, to solve problems, to review the outcome of their efforts, and to determine where they are in implementing the planned changes. Some topics for discussion at these site-level professional development meetings might include:

- Implications of the findings during the PQR for more changes in the focus subject area or in other related areas of the curriculum
- Discussions about building units that strengthen the teaching of curricular content—yet take advantage of the natural connections across the disciplines—and that reflect the developmental characteristics of young children
- Changes in the nature and quality of student work in the selected area as a result of ongoing change in the program
- Discussions of emerging performance standards for students in the selected area in relation to the vision for student performance as set forth in the frameworks
- Use of authentic assessment methods, including portfolio and curriculum-embedded assessment, for evaluating how students are doing
- Planning for more flexible scheduling that would allow more and longer uninterrupted blocks of learning time
- Effects of planned professional development on student work

- Results of observations and peer coaching
- Implementation of technology within the selected area
- Inventory and assessment of all learning resources in the selected area that are available in the school and community

In summary, effective planning and implementation will require modifications in the organizational structure of your school. Time, fiscal resources, committee structures, and communication strategies are the major components that must be addressed by a school that is committed to significant changes. Structured planning and implementation do not occur without deliberate leadership with a vision for improvement. Both must occur regularly and systematically in order to keep the school growing in its capacity for change, as well as in its ability to provide high-quality education for all students.

14. Report periodically to the community.

You must choose how you can best communicate the results of your PQR and subsequent ongoing self-review to your community. Both formal and informal presentations and reports to the governing board, school site council, and other groups can constitute benchmark events that support an ongoing culture in the school's self-review. Such printed documents as newsletters to parents and press releases can become routine means of communicating to your school community.

TIPS:

- Schedule time during faculty meetings for teachers to share teaching practices on a regular basis.
- Foster a school environment of professional support for teachers who take risks and change what they do in the classroom.
- Continue to hold ongoing implementation meetings of the leadership team.

Scenario

June, 1993

Well, it is June, 1993, and we are exhausted, but in a curiously satisfying way! We have accomplished a lot! We have identified the changes we want to make and, for the most part, how we plan to go about making them. We plan to keep the leadership team *alive with frequent meetings in the fall with the whole staff, Parent Faculty Club, and SSC. We realize that implementation will not just happen. Implementation requires ongoing communication with all people who were involved, in all our activities. We have learned there is no such thing as* over-communication. *Teachers are so busy and have so much on their minds! We will be able to assess the planned activities as they unfold. We will be able to coordinate the categorical funding we receive, so that it supports our school focus on science. (It's nice to know there are Eisenhower and Chapter 1 funds for science professional development and science improvement. We plan to write science into our site Chapter 1 plan for next year—something we have never done.)*

Since improvements and their monitoring require so much time, we are allocating a larger portion of our categorical funding for release time. We have divided up the monitoring tasks so that each of us on the leadership team can "keep tuned into" a few specific points in our improvement plan. We are also considering an idea shared at the two-day PQR training last fall: One middle school adds minutes to nine days in a row, then dismisses school at 12:15 p.m. one day every other week. Students are in school the same number of minutes, but teachers have quality time twice a month to meet as a staff during the workday. Since meeting after school is so tiring and release time is often more work than it's worth (writing detailed lesson plans and dealing with discipline after-the-fact), we are thinking about this "short" day idea. That middle school also is training a "cadre" of substitute teachers to serve as substitutes for that school. Imagine, a group of Einstein Elementary subs who know our students' names and are familiar with our idiosyncrasies!

As we meet to monitor our plan, we hope to stay focused on problem solving and to celebrate our small successes along the way. Additionally, our district and county offices continue to be very supportive of our efforts to make improvements at our school. We will continue to modify our school plan during the 1993–94 school year and make midyear adjustments when good ideas occur to us. These adjustments will be reported to the governing board, the SSC, and the community; we even have plans for students and parents to give brief presentations on the changes from their perspectives. We are confident that the changes in curriculum and instruction at Einstein Elementary will manifest themselves in our students' work.

Role of Consultants

Education Code Section 64001(c) states that "school districts shall ensure that for each school in a district operating categorical programs subject to this part, school plans and onsite program reviews are conducted at least once every three years . . . by independent persons not employed by the school district."

Consultants Assist Schools Throughout the PQR Process as Needed

In the new PQR process, consultants satisfy the legal requirement for PQR. The role of consultants in this new process is that of a "critical friend," to help broaden your thinking, not just to validate what you have done. Since the role of the consultants is to provide assistance during the curriculum self-review process, they can be called on as many times as needed throughout the process and as local resources permit. It is strongly recommended that each consultant be available for *at least three days* over the course of the year. Your leadership team will decide the best ways to use them and the best times for visitations.

The consultant team should include at least two people, even for very small schools. Two individuals are likely to generate more ideas than one, and multiple points of view are likely to generate more professional dialogue. For larger schools, more consultants could be added; however, this may depend on local resources. Whatever the actual number, ideally the consultants are quite knowledgeable about the subject area chosen by your school, as well as able to play a facilitating role in helping you think through changes for improving teaching and learning. *It is strongly recommended that the consultants visit the school together as a team.*

It is the role of the PQR consortium or cooperative director and/or district staff to match consultants to the needs and curricular interests of your school. Matching consultants with schools should occur prior to the PQR training and should take into consideration the student population of the school. For example, schools in which a large number of students are learning English could benefit by working with a consultant team with bilingual expertise. It may be possible in some areas of the state for leadership teams from schools with the same focus area to use members of their leadership teams as consultants for another "buddy" school. While the schools would have to be in different districts to meet the statutory requirement for PQR, pairing or networking allows schools to learn from each other and work together for improvement.

Ways Consultants Can Assist in the PQR Process

Before the consultants visit, you will need to decide how they can best help you. The focus of conversations with the consultants should be on student work and how the student work compares with that described in the frameworks. Consultants may assist schools in a variety of ways throughout the PQR process:

- Help plan the curriculum self-review process.
- Make suggestions on how to collect student work and what to look for while observing students working.
- Help the staff analyze the collected samples of student work in terms of how the work compares to that described in the framework and the curricular criterion.
- Model one or two lessons for your teachers to observe in one or two of the classrooms; this also provides a vehicle for collaborative discussion about the work resulting from the lesson in an after-school meeting.
- Make specific recommendations for changes in curricular materials and instructional practices.
- Offer suggestions for additional resources.
- Help develop or refine your improvement plan.
- Advocate powerful and meaningful learning situations for *all* students.
- Offer suggestions for helping staff who are resistant to change.

> ***"They came to a faculty meeting and sat down with us to find out how best to help. . . . They got a feeling of what the school staff thought they were in for. . . . They were real people who also taught. They supported us . . . and we learned from this partnership."***
>
> **– from a principal referring to teachers as consultants**

Desirable Characteristics of Consultants

Ideally, the two-person consultant team should have as many of the following characteristics as possible:

- Practical teaching experience in the elementary grades in the school's in-depth curricular area and with students working on tasks described in the framework
- In-depth knowledge and understanding of the current framework in that area
- Knowledge about current reform efforts
- Knowledge about how technology and other learning resources can be used to improve student work in the curricular area

- Ability to ask probing questions about current classroom instructional practices and, through observations, discussions, and analyses of student work, to differentiate between superficial implementation of the framework and powerful learning situations
- Experience as a mentor teacher in the chosen curricular area
- Prior attendance at a multiweek subject-matter project summer institute or specialized training in the curricular area
- An understanding of how elementary schools can go about changing how they are organized and the way they do business in order to significantly increase student learning
- Experience in different roles in elementary schools (teacher; school or district administrator; member of district, county, or state advisory committees)
- Knowledge about the use of authentic assessment and how the results can be used to improve the curriculum and instruction in the school
- Ability to propose new ways of using instructional time, new roles for teachers, new ways for the school staff to work together, and perhaps new forms of shared decision making that could lead to instructional improvements
- Ability to facilitate group meetings so that each participant feels involved and acquires useful information
- Knowledge of available local, regional, and state resources
- Good interpersonal skills

"They really helped me out because they knew the subject and could moderate the discussion of change."

—from a principal referring to consultants at his school

TIPS for Consultants Working Together as a Team:

- Consultants should contact one another prior to their first school visit.
- Consultants should exchange information on their backgrounds and determine how they can best assist the school; e.g., areas of curricular expertise and experience in group activities should be shared—who will contact the school to make arrangements for each visit, who will assume responsibility to ensure that each visitation report is completed and given to the school, and so forth.
- Consultants should write a single report after each visit rather than having both prepare separate reports.
- After each visit, the consultants should assess with one another, in person or by phone, their effectiveness in assisting the school during the visit and discuss any changes that might make their next visit even more effective.
- Consultants should discuss possible resources and recommendations that they might make to the school.

Ways Consultants Can Prepare for Their Role

Some consultants may look at what is described as the consultants' role and feel that they need more preparation for this role. There are many ways that consultants can improve their skills in the areas that are described. There are activities throughout the state that can assist consultants in providing information on reform and curriculum, such as the subject matter projects, California Alliance for Elementary Education, and California School Leadership Academy training. Many counties and districts offer staff development activities related to the frameworks, authentic assessment, portfolio assessment, collegial coaching, and other pertinent areas. If a group of consultants in an area conducted a needs assessment for professional development for their group, the PQR coordinator and/or county or district professional development person might be able to assist them in getting the types of professional development they request.

"We would like to have the consultants come back next year."

—from a leadership team member

TIPS for Consultants Working with Schools:

- Consultants may want to telephone the school to request a profile of school information prior to their first visit.
- Early on, consultants may want to meet briefly with the leadership team and staff at a regular faculty meeting to become familiar with the school, its student population, and its goals and objectives for the PQR.
- Keep the discussions positive. It might be helpful to have previsitation conversations via telephone between the consultants and a member of the leadership team to agree on how to keep discussions positive.
- Work with the leadership team to schedule times that best fit the needs of the school staff as well as those of the consultants. Keep in mind that after-school meetings are not the favorites of many teachers.
- The role of the consultant team is a collaborative one. The more frequently the team can visit and/or talk with the leadership team, the more likely the school will be successful in significantly improving teaching and learning in the school.
- One possible activity for the consultants could be to review the scope of essential questions and determine if all major concepts of the framework and the curricular criterion have been addressed.

Consultants Write a Visitation Report as Documentation of Each Visit

Consultants may write the visitation report together the day of the visit prior to leaving the school site, or they may choose to send a copy to the school a few days later. In either case, a single report is written together by the consultants for each visit.

Visitation Report(s)

PRODUCT: There should be a written record of each visitation at the school. Consultants' comments, analyses, and/or recommendations should be written and disseminated to the leadership team, faculty of the school, and the SSC. Any format is acceptable for recording the information—the objective is to communicate clearly to others the essence of the conversation and agreements, if any, between the leadership team and consultants. (See pages 294–304 for sample formats.)

Scenario

1992-93

Teaming up with our two consultants during the two-day PQR training got us off to a good start! They visited our school for four days, one day each in early January, early April, early May, and the third week in May. Assistance from them was invaluable! They assisted us in synthesizing our findings and offered several ideas for us to consider. Prior to their last visit, we talked among ourselves about several different approaches or possible things to change in order to improve our science program. Then, during their visit, they helped us think through what changes, if made, could then drive other improvements. For example, they agreed with us that if we could meet during the next school year to develop a content matrix, for the purpose of achieving a more balanced program of life, physical, and earth science, then this would also help determine which kinds of hands-on materials to purchase.

Our two consultants were selected jointly by our leadership team and our PQR consortium director. One individual was a science teacher at an elementary school in a neighboring district, and the other was a mentor teacher in that same district who had been involved with CSIN for three years. This other district also belonged to our PQR consortium.

The science teacher was able to contribute a great deal to our discussions about changes we could make at our school. Moreover, she served as an excellent facilitator! We felt we could call her anytime in the future to discuss how things were going at our school.

Besides knowing the Science Framework, *the mentor teacher was able to give us ideas seen in other schools involved with CSIN. Moreover, these other schools, much like us, are undergoing fairly dramatic demographic changes.*

We received copies of the consultants' written comments (visitation reports) after each visit to our school. These served as records of our progress, as well as helping us keep focused on our overall tasks.

PART II

PROGRAM QUALITY REVIEW CRITERIA

Curricular Criteria

The curricular criteria describe student work in "ideal" programs that are aligned with the goals of the frameworks. The goals for each framework are described in the Focus Statement that appears at the beginning of each curricular criterion. Within each criterion, the conceptual organizers (which appear as boldface statements) and the descriptors of student work (which appear as boldface subpoints) are not necessarily of equal weight, nor should they be considered individually. Rather, they should be viewed collectively as aids in identifying the nature of student work that results from exemplary programs. Following the descriptors of student work are examples of scenarios, or vignettes, which offer more complete pictures of how students can actively engage in learning. The scenarios can also be considered as a set to help provide a picture of student work in a high-quality program.

The scenarios in the criteria are not meant to be prescriptive. The particular tasks and units that students work on may vary widely across schools, and, perhaps, even among classrooms within a school. The scenarios also assume that the students in each classroom are diverse—that the students have a wide range of cultural, economic, and linguistic backgrounds as well as achievement levels and interests.

Following the Student Work section of each curricular criterion is the Professional Practices section. This section includes discipline-specific information about what teachers do, as professionals who are serious about the quality of teaching and learning, on a regular basis to make improvements.

Health Education Criterion

Focus Statement

The comprehensive health program involves students, school staff, families, and the community in working together to promote good health, prevent health problems when possible, and address them in a systematic way when they do occur. All students are engaged in activities that foster the development of each individual's optimal physical, mental, and emotional state of well-being, leading to healthy choices and lifelong good health. The program addresses four unifying ideas of health literacy: acceptance of personal responsibility, respect for and promotion of the health of others, an understanding of the process of growth and development, and informed use of health-related information, products, and services. The curriculum is woven under these unifying ideas and implemented through a meaningful, student-centered approach, providing opportunities for participation, recognition, and successful achievement.

Regardless of the language of instruction, an effective comprehensive health program focuses on development of knowledge, skills, and behaviors in a sequence that begins in kindergarten or before and continues throughout high school. To enhance student success, the program makes connections among the content areas of the health curriculum, all components of a comprehensive school health program, and other curricular areas. Many tasks or lessons are based on students' personal, family, or cultural experiences. The effective program (1) presents current and accurate information, (2) recognizes similarities and differences among students, (3) emphasizes the importance of actual behavior, not just health-related information, (4) is culturally appropriate, (5) makes the curriculum accessible to students in a variety of learning styles, (6) makes use of opportunities for active learning, (7) focuses on mental *and* emotional health, (8) emphasizes character development, and (9) uses technology to enhance learning.

Assessment is consistently aligned with and embedded within the instructional program. A variety of assessment strategies are used to measure not only knowledge gained but also skills and behaviors learned. Students are involved in self-assessment and use assessment results to improve their health behaviors. Students and staff plan and conduct assessments of the comprehensive health program and use assessment results to plan program improvements.

Student Work

Personal Responsibility

The comprehensive health education program promotes the acceptance of personal responsibility.

- **Students participate in activities that foster the development and protection of a healthy mind and body.**

  During National Dental Health Month, the school nurse comes into a kindergarten class and demonstrates how to floss teeth. Students role-play how to maneuver floss by using pieces of yarn. They then watch a video about caring for teeth and gums. Later in the day, Delton role-plays a patient while Esther plays the part of the dentist. The imaginative play area is arranged as a dentist's office for the month, allowing the adults and students in the class to observe students role-playing dental hygiene.

Using the Choose Well, Be Well curriculum, Mr. Foster's sixth grade class has been investigating the scientifically based concept of the "food pyramid," in which decreased fats, limited proteins, and increased fruits, vegetables, and grains are recommended for better health and prevention of disease. As a culminating experience Sylvia's mother, Mrs. Yanez, helps the class to prepare El Salvadorean bread specialties made with whole grains. The next day, using a food-pyramid checklist, the students analyze the lunchtime meal with the help of the food service manager. The students are pleased to see that the school cafeteria has been decorated by the child nutrition staff with the class' artwork about healthy food choices. Mary says, "There's my poster about eating more broccoli."

Students in cooperative learning groups research the cost, availability, and reliability of gear designed for the protection of a healthy body. Seventh graders Jose, Bill, Sam, and Maria bring an infant car seat and demonstrate its proper use. Wing Tat's group invites a local sporting goods representative to come to the class and demonstrate protective skateboard gear. Sue, Jahmal, Juan, and Victoria show a video detailing the development of the seat belt and air bag. Arnie, Angelica, Mae, and Ling's group invites the physical education teacher to discuss protective football equipment. Anita, Robin, Justin, and Gregg's group uses a computer animation program to make a cartoon on the importance of using bicycle helmets. Gregg brings in the bicycle helmet he wears as well as a list of local stores where helmets can be purchased. Impressed by the quality and variety of the presentations, the principal invites the class to share their presentations at Open House.

- **Students discuss and demonstrate behaviors that prevent disease and speed recovery from illness.**

After Mrs. Fletcher's third grade class reads the book *Body Battles*, a cartoon-style book about disease prevention, students in small groups discuss ways to prevent diseases from entering their bodies. Jesse, Andrew, and Mario's group draws a cartoon layout, which is pulled through a paper TV screen and shows the importance of washing hands before preparing food. Carla, Remadios, and Amanda, who are just beginning to speak English, draw a storyboard layout about covering their mouths when coughing or sneezing and present it to the class in their native language.

As part of a unit on personal hygiene, growth, and development, each fourth grade student creates a personal plan covering hygiene and habits to share with classmates. The students invite a dental hygienist from the county health department's Smile Keeper program to the class to discuss dental hygiene. Ms. Smits, the hygienist, introduces Dr. Lau, her co-speaker, who works with victims of smokeless tobacco use, to share his experiences. As a result of the lesson, the students write letters to favorite athletes who have publicly opposed use of smokeless tobacco to recognize them for being good role models. Alberto beams when he receives a letter back from one of his favorite athletes written in Spanish, his native language. As part of their portfolio, the students prepare presentations on other habits which can prevent illness. Jason and Xavier create a video of all the things around a house that could cause common allergic reactions. Sally and May work with STAMP (Stop Tobacco Access to Minors Program) and prepare a presentation to the city council. Steve and Adolfo create a public service announcement advocating the use of sunscreen. Bob, Sarah, and June interview a physical therapist on how to help muscles recover after an injury. Students present their work to Mrs. Khan's third grade class.

In groups, eighth grade students choose topics from a teacher-developed list of diseases to research and develop into a video documentary using interactive laser disc technology along with selected research materials, current events, and literature. Cindy and Gail choose cancers of the digestive system and with materials provided by the American Cancer Society and the help of the food services manager develop a documentary showing a life-long nutrition plan to reduce the risk of cancer. Leroy, David, and Penni read the *Ryan White Story* and, using additional research materials, develop a documentary on AIDS. Interviewing Mr. Bresano from the American Cancer Society, staff from the local hospital, and representatives from local businesses, Charles and Katy present a documentary on the role of environment in the development of chronic lung disease. The rest of the class is surprised when the documentary reveals that heart disease is the most common disease related to tobacco products.

- **Students practice and apply first-aid and emergency procedures.**

In preparation for the first disaster drill of the school year, Ms. Chisolm discusses with her second grade students procedures which they remember from previous years. The class rehearses proper procedures for duck and cover and for evacuating the classroom. Ms. Chisolm chooses Table 3, with Kevin, Nga, Sarah, and Jose, to model proper procedures in the classroom. Table 5, Natalia, Jaswant, Meshan, and Mike, color a school map to show their route of evacuation and their assigned meeting place on the playground. Following the first disaster drill, the principal, Mrs. Harrington, praises Ms. Chisolm's students for their prompt and orderly evacuation.

With the assistance of the school nurse, Mrs. Strong, a fourth grade class learns basic first-aid procedures, and the procedures for treating emergency skin wounds. Critical areas are addressed, including universal precautions such as hand washing and safety in dealing with blood and other body fluids. Maria, Jeremy, Ngyuen, and Win-Win follow up with a cooperative practice session in which each student pretends to clean and dress skin wounds. The next day Susie reports having used the newly acquired first-aid procedures at home when her brother fell and injured his knee.

Still excited over their fifth grade experience of dissecting sheep lungs to understand the function and design of the respiratory system, Mrs. Waldren's sixth grade class works in cooperative groups to build Resusci-Annies. Mr. Ramirez donates materials from his lumber yard for the project, and Mrs. Swenson, the wood shop teacher, assists in the construction phase. The school nurse, Mrs. Cowan, and a city paramedic instruct the students in the proper procedures for C.P.R./first aid. Collin says he often watches the television show "Rescue 911" and people don't know what to do in emergencies. Mrs. Waldren tells Collin that now he will know what steps to take in an emergency. Mrs. Cowan stresses that getting professional help quickly is the most important aspect. With the cooperation of the local police department, students use the speaker phone in the principal's office and practice making a proper 911 call.

- **Students practice behaviors that decrease the risk of becoming involved in potentially dangerous situations.**

After getting appropriate parent permission, the local child abuse council presents an age appropriate puppet show to Mr. Galvan's third grade class. The show deals with inappropriate touching of children's bodies. At the completion of the show, volunteers listen to discussion and answer questions by the class about the difference between good and bad touching. During lunch and after school, one of the volunteers is available to talk to students on a one-to-one basis about individual concerns.

Fourth graders Jason and Josh meet with Officer Garcia after their classroom D.A.R.E. (Drug Abuse Resistance Education) presentation to get some advice on how to deal with a group of middle school bullies that have been hassling them after school. Officer Garcia helps the boys by leading them in some role-playing and reminds them of the group that meets every Thursday after school to work on assertiveness and conflict resolution skills.

Eighth grader Aaron stands at the board recording a class brainstorming session. After listing dangerous situations, including riding with a drunk driver, being in a smoke-filled room, walking alone at night, feeling pressured on a date, and not wearing a seat belt, the students select date pressures for further exploration. Ms. Gray poses the question, "Why is there pressure on a date?" "Sex" shouts Billy. "Parents' rules" points out Linda. "Drugs and drinking at parties" suggests Kim. "Drive-in movies" says Carey. "Not having a date" moans Grant. "Where to go" wonders Tran. "How can we reduce that pressure?" asks Ms. Gray. This new list includes agreeing not to have sex, negotiating with parents and recognizing the safety rules, admitting that drugs and alcohol can ruin a date and let you do things you regret, going to walk-in movies, spending time with good friends, and identifying fun, safe date places. "Where are the fun, safe date places in our town?" asks Ms. Gray. Aaron suggests the class make a book about safe dates. After enthusiastic agreement, the students decide to divide into small groups to find as much information as possible to list in their book. The book, *A Guide to Safe Dates*, includes the cost, location, menus, hours, discounts, transportation options, attitude toward young people, and a rating system. The guide includes the bowling alley, the skating rink, miniature golf, walk-in movies, Malibu Grand Prix, the mall, the recreation center, and local sports events. After a presentation to the school board, the superintendent and board president decide to approve the guide and distribute it to each eighth grade student in the district. The nearby print shop, with Lion's Club funding, prints *A Guide to Safe Dates* for each student.

- **Students participate in a variety of activities that are known to reduce stress, provide support, and foster a sense of belonging.**

Mrs. Kooy has concerns about second grader Brandon's behavior and lack of social skills. She brings his name forward at a mass screening of the student study team early in the school year, and it is decided that Brandon would benefit from having an adult buddy, a staff member not involved in his day-to-day academic instructional program. Once a week, for the duration of the school year, Mr. Lossen and Brandon get together to eat lunch, play checkers, talk, or have a quick game of basketball. Mr. Lossen is also a coach for a local soccer team, and Brandon is excited about his role as a junior coach's assistant.

Fifth grade students have been keeping a diary of ways to cope with stress. Robert has been concentrating on time management skills because he feels he doesn't have enough hours in the day to do everything he wants. Alexis is finding ways of getting better rest because she often wakes up in the morning feeling drained and too tired to work with others on her team. Mark comes to school with a stomach ache each day and finds in his food diary that he often forgoes breakfast. The class shares their findings in small-group discussions to brainstorm ways of "feeling good." A student team is formed to welcome and assist Ulyesses, a student from Mexico who speaks very little English, in feeling secure at his new school. Ramon, another student who also speaks Spanish, assists Ulyesses in getting to know the class better.

On a September Friday morning, seventh grader Kim walks to school with Carmen, her "Bancroft Buddy," the new student she agreed to buddy up with. Kim is wearing a red shirt that has the words "Personal Best" across the front and that is covered with patches. Carmen asks her about the shirt. Kim explains that Bancroft Middle School gives a red personal best shirt to every student who receives at least a C average on his or her report card. Pointing to the patches she says, "The shoe patch is for doing well in physical education, the microscope patch is for doing well in science, the heart patch is for my good work in health, and the star patch is for bringing my parents to Open House." She goes on to explain the other patches. Carmen sees many red shirts when she and Kim arrive on campus because Friday is Personal Best Day. At the November Personal Best skating party, Carmen proudly wears her own red shirt as she skates beside Kim.

- **Students develop a life plan centered on health and wellness.**

Mr. Baily from Washington Community Hospital has come to visit Mrs. Jackson's first/second grade classroom. He talks to students about how to keep their bodies healthy, sharing personal examples of how he, as a child, did things that helped to make him the healthy adult he is today. He talks about hand washing, eating plenty of fruits and vegetables, drinking milk to build healthy bones, and exercising regularly to build a healthy heart. As a follow-up activity, each student produces his or her own page showing a healthy habit. The pages are bound into a class "big book," entitled *Me Too, and the Healthy Things We Do.* The following week Francisco, Khadeja, and Eric, from Mrs. Jackson's class, read the big book to the kindergarten students in Mrs. Bush's class.

For an end-of-the-year portfolio project, students in Mrs. Cook's sixth grade class are busily planning with each other. Molly, Sam, and Tony are mapping out a "Game of Life" board with cards for choices and decision making opportunities with different point values. Susan, Jessie, and Jose are creating time *lines on butcher paper with drawings* depicting personal milestones complete with good health tips to assist with reaching life goals. Sam and John are listing agencies to interview in an attempt to discover which types of community service catch their interest. Sally is writing a letter as if she were 80 years old and describing her life to her granddaughter who lives in Italy. All project presentations are videotaped and viewed by other classrooms that are on closed circuit monitors. Students who wish to share their videos with their families bring in blank videotapes and make copies.

Mr. Corrales watches in amusement as his seventh grade health class performs a play they have written for the fifth graders. His students are portraying themselves as a group of retirees having a reunion in the park and discussing health influences on their lives. George is sixty-seven years old and hooked up to a portable oxygen unit because he has emphysema from smoking cigarettes since he was fourteen years old. Martha and Roberto jog up to the others. They are practicing for the citywide "Over-60-Only" 5K run. Henry looks longingly at a bowl of apples but must decline when he is offered one because he no longer has his own teeth. "I sure wish I'd brushed more often and gone to the dentist regularly when I was growing up," he says. Roberto says, "Gee, I miss Maggie." "Those last days in the hospital were awful for her," says Martha. "Liver disease from alcoholism is a painful way to die." The retirees conclude the show by teaching the fifth graders their health recipe for a long and healthy life. The videotape of the performance will be shown at a PTA meeting.

Promotion of Health of Others

The comprehensive health program promotes respect for, and promotes, the health of others.

- **Students draw on their experiences and knowledge to share and model health-promoting behaviors with their peers, family, and community.**

As the culmination to a unit on the food pyramid, students in Mr. Chung's third grade class keep food diaries of their breakfast as part of a homework assignment for a period of one week. In small groups at school, students are given the opportunity to share their findings and decide how these will be presented at the annual student health fair. Loretta, Karina, Thanh, and Paul decide to create a graph showing their data. Brooke, Gustavo, Vu, and Arezo make a collage using pictures from magazines. With the help of the resource specialist, Mrs. Dryden, three students write a puppet show to be presented during the fair. During a whole-group brainstorming session, students develop an invitation from the class to family and community members to attend the health fair.

As an extension of Mr. Wong's "Shaping Healthy Choices" unit, the fifth grade class decides to do a home project by developing menus for their families. The district child nutrition director works with the class to develop a week-long menu for every household. In cooperative groups, evaluation forms are written to be utilized at family meals to assess the attitudes and opinions about the student-planned meals. Each student commits to writing shopping lists, assisting in purchasing ingredients, and taking the responsibility of preparing at least one of the meals during the week. Students summarize and write personal statements about the experience.

Along with everyone else in his seventh grade class, Koichi takes home the family health tree chart and questionnaire and discusses it with his mom. Many of the health problems of his mother's relatives are easily filled in. For his father's side of the family, he needs to phone his paternal grandfather since his father no longer lives at home. The completed chart shows Koichi two generations of health problems, including a tendency toward diabetes. The following day, after they share their charts with other students, Mrs. Johnson of the county health department shares community health trends, which they compare to their family health trees.

- **As students practice social skills, they demonstrate and reinforce the benefits of effective interaction with others.**

In her kindergarten class, Mrs. Moore stresses the need to be positive with and kind to others. During an activity time, Adriana, Bryan, Saba, and Joshua build a structure with Unifix cubes. Each student in Frederick's group must then say one positive, complimentary thing about the building. Richard, who was born in Vietnam, tells the class how to say several complimentary words in Vietnamese. The group then discusses with the class how these words made them feel and how they could think about saying positive things to others throughout their day.

As part of the district's D.A.R.E. program, all sixth grade students participate in an all-day experiential Challenge Course with their classroom D.A.R.E. officer. Each classroom works as a team to meet the challenges of the course, all of which are designed for cooperative group solving. Matt challenges himself to complete one of the high elements and is given encouragement by his classmates. Arleene is unsure of climbing the pole to the top and chooses to challenge herself to reach the fourth rung. Her efforts are applauded equally to Matt's. Tran is delighted to discover that he is able to take the lead in one of the activities that needs a smaller student to negotiate the element. The next day's journal entries demonstrate the high level of excitement that the students felt about the day's activities.

As eighth grader Tony writes in his health journal, he thinks back to last Saturday night. Bill was spending the night at Tony's house, and Tony's parents were gone for the evening. However, his older sister, Lillian, was in charge. When Lillian was invited out, she decided to leave, telling the boys to behave themselves. Bill suggested phoning some girls in their class to come over and "party." Tony was concerned: "What if we get caught? What if something happens?" Bill replied, "What could happen? You worry too much; loosen up, man!" "I have a better idea," said Tony, utilizing the refusal skills he had learned while role-playing in health class. "My mom left some money; let's rent some videos, order pizza, and play Nintendo!" "Sounds like a good deal," Bill agreed.

- **Students have many opportunities to learn, reflect upon, and apply their decision-making skills in relation to the health and well-being of others.**

Ms. Flores' first grade students have been reviewing methods they have learned for controlling anger. Jonathon reminds the class about pounding a pillow. Marcia shares that counting to 10 works well for her. Running, jumping rope, and exercising are methods that Randy reports are best for him. Later that week on the playground, Randy's friend Van becomes very angry after losing a tetherball game. Seeing Van's distress, Randy reminds him about overcoming his anger by exercising and suggests that they go run on the cinder track.

Fourth graders Maria and Tong Na stop in the girls' restroom on their way to meet with the You're Not Alone group and notice a syringe of some sort near the wastebasket. Maria remains to keep others from potential danger while Tong Na reports the situation to the teacher in the nearby classroom. Mr. Tognelli, the custodian, arrives promptly and picks the syringe up with gloved hands and a pair of tongs, placing it in a container for sharp objects that is marked with a biohazardous materials label. The girls are thanked for their prompt and appropriate action. Later in the day, at journal time, Maria and Tong Na write about their experience.

The day after the Great American Smoke-Out, Mrs. Duge surveys her seventh grade class and develops graphs on their results to get family members to quit smoking for 24 hours. Several students had planned to adopt a smoker for that day. These students give brief oral reports on their efforts. "My Tio," says Mario, "quit for 24 hours and is working on his second day." "My mom wouldn't even try," said Kanina. In Daniel's home they discussed secondhand smoke caused by his parents' smoking and agreed to make the TV room smoke free.

- **Students investigate and respond to environmental issues which affect people's health.**

Several students in Mrs. Morales' second grade class notice that there appears to be more litter on their playground on Mondays. Having learned that litter negatively affects the environment and can affect both animals and humans, they bring this to the attention of the student council. The council, with the help of the coordinating teacher, organizes a contest among primary grades to clean up the playground on Mondays. Second graders Maiya and Roberto visit kindergarten and first grade classes to demonstrate safe and effective methods of collecting litter.

As a culminating experience to a unit focusing on factors and issues which affect health and the future of the planet, student teams in Mr. Guerrero's fourth grade class plan a schoolwide Earth Week celebration to inform and engage peers, families, and the community in environmental protection. Evangeline, Lindsay, and Hank are working with Mr. Guerrero in their classrooms to participate in special drives for recycling paper products, cans, and other types of containers. Mr. Guerrero conducts lunchtime and after-school workshops where kids develop songs, poems, and articles to be submitted to the local newspaper. A Save-the-Earth-and-Its-Inhabitants rally is held, and students share dances, skits, and songs encouraging all to get involved in protecting the environment.

Mr. Heap brings to his seventh grade class a variety of suntan lotions and tanning products for a jigsaw activity. In small groups students analyze the products by filling out a generic questionnaire. Returning to their home groups, students teach each other the information they have learned. Using this information, students brainstorm about when it would be advisable to use the suntan lotion. The list includes swap meets, physical education class, bicycle riding, snow skiing, overcast days at the beach, and Little League games. Students continue this discussion with their physical education teacher, and with the assistance of the local drug store they are able to make suntan lotion available to all physical education students and teachers.

- **Students' experiences include acting as advocates to promote positive norms and behavior.**

Mrs. Lindstrom's third grade students have been receiving monthly presentations by the D.A.R.E. officer, who has organized the class into small groups in which they have developed skits about drug awareness and prevention. Mrs. Lindstrom is so impressed by the quality of these skits, and the enthusiasm of the students, that she arranges with the state preschool teacher, at the school site, for several of these skits to be presented to students with limited English proficiency. Manuel, Natalie, and Redmond present a play about children who only take medicines from an adult they know and trust.

Vista Mar School has scheduled a schoolwide tobacco youth summit, as suggested by Ms. Hicks' fourth grade class. Guest speakers from the district and local community have been invited to talk at a school rally about advertisements, hidden messages, and peer pressures in regard to tobacco use. Rotating break-out workshop sessions conducted by upper elementary students have been scheduled with an emphasis on decision-making skills, modeling, and role-playing refusal skills, and helping others to stop smoking. For the afternoon, the theatre group Los Hispanos Unidos has been invited to perform a musical play depicting the struggles and successes of Hispanic youth to refrain from smoking. At the end of the performance, the theatre group invites the summit participants to join in dancing to the music of current favorites. Later, students write letters of appreciation to Los Hispanos Unidos, thanking them for performing at their school.

Seventh grader Van excitedly returns her permission slip to take peer counseling training. She has checked off English and Vietnamese as languages in which she feels most comfortable communicating. Her schedule is changed, and for one hour a day she meets with other seventh graders to receive training as peer counselors. Directing from her wheelchair, Mrs. Lee, the counselor, assists students in role-playing to resolve an argument using conflict management techniques. The students look forward to the eighth grade, when they will be official peer counselors for their school.

Growth and Development

The comprehensive health program promotes an understanding of the process of growth and development.

- **Students communicate in a variety of ways their understanding of the universal aspects of physical, mental, emotional, and social growth.**

The PALS (Preservation and Life Skills) counselor, Mr. Dunbar, during one of his weekly visits, further develops a unit on growing and maturing socially. He discusses with the third grade class how to get and keep friends, the importance of being able to share, and how to work effectively in a group. They also talk about how to communicate their ideas to others. As a follow-up during his next visit, Mr. Dunbar forms small groups of students and assigns them the tasks of working through the construction of a model building, with each group using a different building material. None of them speaks the same language. Each student wears a tag with the name of a different language. Javier wears a tag labeled Hungarian, and he is curious as to where this is spoken. Students come to the conclusion that they must use gestures, facial expressions, touching, and pantomime in order to work together for their common goal.

After a short introductory class discussion of human growth and development, Mrs. Kobashi's fifth grade students return to their cooperative teams and choose various topics to research. Mrs. Kobashi had previously set out literature and charts on each table for the students to use in their research. Jennifer's team chooses to present HIV/AIDS prevention in a play format. Joaquin's group decides on a radio drama on the risks of tobacco use. Susan's team finds a poem related to adolescence and growth to present orally. All presentations are videotaped and played during Public Schools Week on the local public access TV channel.

For Adolescent Awareness Day, eighth grade students dress in costumes of their own design representing universal rites of passage. LaWanda presents a rap about getting her driver's license. Kim and Mary act out a mother-daughter conversation about the onset of menstruation. Aaron reads a piece in Hebrew from his bar mitzvah ceremony. Using an overhead projector, William demonstrates how he filled out his first job application.

- **Students recognize, acknowledge, and value themselves as unique individuals.**

During the first week of school, Ms. Franconi leads her first grade class in a discussion of how we are all different, yet special in our own way. She then pairs students for an art project, taking special care to pair Laily, a native speaker of Dari, with Abo, another Dari speaker who has a better command of English. Abo is able to explain to Laily how they must draw a portrait of each other's head and neck. The frame of the portrait is then made into a border which depicts in pictures and words the likes, dislikes, and special characteristics of the partner. With Abo's help, Laily is able to share her portrait of him with the class, and several students comment on her artistic ability. The portraits are then displayed on a board in the hallway for parents and others to view at Back-to-School Night.

As a means of promoting individual self-esteem, Mrs. Chang has asked that her fourth grade students design a personal coat-of-arms shield depicting three characteristics which they feel makes them unique and special persons. Ed makes sure that as part of his shield he draws a quill to represent his artistic ability. Tony draws a stylized number 10 on his to show that he is a math whiz. For Nidia, a pair of red sneakers represents the fact that she walks a half hour after dinner each evening with her family. All shields are displayed on a colorful hall-of-fame bulletin board in an area where they can be viewed by schoolmates, school staff members, and parents.

During the first week of school, Mrs. Acosta takes a picture of each student in her seventh grade health class. After the high school photo lab sends her the developed pictures, each student prepares a collage of pictures and words that reflect and describe her or his individuality. Each photo is placed in the center of a shield surrounded by the student-made collage. The shields are hung around the classroom for students to see and parents to enjoy at open house.

- **Students demonstrate respect for the dignity of all individuals.**

Thomas, a student in Mrs. Broad's second grade class, wears leg braces and has crutches as a result of spina bifida. On the playground, Hanh, Ton, Aaron, and Thomas play a game of four-square. It is the group's decision, before the game begins, that the usual rules of four-square will apply, but Thomas will not be required to run after the ball. After a month's time, Thomas' physical therapist notices that his upper body large motor skills are much improved. Thomas is now a much-sought-after competitor in four-square games.

Ms. Miller creates a team-teaching connection with the adjacent Developmental Center to provide an opportunity for her fourth graders to select buddies from the center. During physical education, Chris works with Jeremy on skill acquisition for the upcoming Special Olympics. Alice interviews Sam in preparation for the writing of his biography. Olivia reads her story to one of Mr. Greene's first graders and can't wait to present her illustrated "book" to her partner, Amelia, at the end-of-the-year celebration.

Mrs. Midler's class has decided to participate in a series of community service projects. In four groups of seven, eighth grade students work together to develop their projects. Wendy's group decides to make monthly visits to the Cherry Blossom Retirement Home to interview residents. Carlos' group contacts AIDS Project L.A. and arranges to help Meals-on-Wheels with deliveries to local AIDS patients. Ling's group become trainers with a group of students entering the Special Olympics. Melissa speaks for the entire class when she says, "I feel like I have made a lot of new friends I never would have met before."

- **Students cope effectively with the physical, mental, emotional, and social changes that occur in the life cycle.**

During the first two weeks of school, Mrs. Sattler notices that her new kindergarten students seem to be having more difficulty than usual in coping with this new phase of their lives. She introduces a motivational class chart where students are awarded stickers for tasks such as negotiating their way to and from school, going to the restrooms on their own, sharing toys and games with others, lining up correctly, and treating others with kindness. After a month's time, students are rewarded with a popcorn party to celebrate their new accomplishments.

As a way of introducing students to coping with life changes, a fourth grade class role-plays ways of responding to family changes in which a new baby is introduced to the home, a brother goes off to college, or an 81-year-old grandpa comes to live with the family. After discussing the issues involved in each scenario, the students investigate the means for bringing community help into each situation to further assist the family in coping with the various changes. Anna, whose mother survived breast cancer, shares her experiences in helping her mother during her recovery. Anna helps the other students realize that cancer is not always a fatal disease and that people can help each other get well.

In Ms. O'Brian's seventh grade class, students develop a list on the chalkboard of possible physical, mental, emotional, and social changes that could occur in a person's life. After developing an extensive list, students are directed to select one life experience that they could relate to and write a story about. Tanisha writes about the time her brother had scarlet fever and had to be isolated from the family. A talk with the doctor reassured her that he was OK, but she really missed him. She was lonely because her parents were preoccupied and didn't have much time for her. Using a comic-strip format, Eileen writes a humorous story about her life in a wheelchair. Dong Lee presents a moving oral presentation about how lonely he felt when he first came to America and didn't know any English.

Informed Use

The comprehensive health program promotes informed use of health-related products, information, and services.

- **By applying principles of research, students develop and apply criteria for establishing the credibility of health-related information, products, and services.**

As part of a unit on Consumer Health, Mr. Del Rio's second grade class has been recording and viewing commercials from television that advertise anti-bacterial creams, lotions, and sprays. They decide to do a survey of all three second grade classes to discover which is the most widely used of these products. They present their findings in graph form as a monthly math activity.

Mr. Lee challenges his sixth grade class to review magazine advertisements and make collages of products that are designed specifically to improve the appearance of men and women. John is able to find 18 different kinds of deodorant specifically for men. He designs his collage in the shape of a spray can. John's team chooses this product for a comparison study based upon claims in the advertisements. In the process, they discover their own criteria for an effective product and include them in the comparison. They produce their "graph" report on their computer and print copies for the entire class.

Working in cooperative learning groups, seventh grade students examine a variety of personal care products. Using their journals to write data, they compare cost, content, environmental impact, availability, health risks, safety, directions for use, and how this information compares to how the product is advertised. Joey's group is working with hair care products. Blossom's group is examining over-the-counter pain remedies, and Bob's group is working with mouth care products. The students also interview people who have used the products. In oral reports to the class, the students present their analyses of the products and their personal opinions of whether or not they would use the products and why.

- **Students develop skills in identifying and responding to negative and positive influences—peers, family, friends, and community—that affect personal choices.**

Juan, a student in Mr. Thompson's first grade class, has been learning about the importance of eating at least five servings of fruit and vegetables a day. When his best friend Ricardo comes to spend the night, Juan offers him an apple as a late-night snack. "Don't you have any cookies?" asks Ricardo. When Juan explains his five-a-day habit to Ricardo, they both decide to enjoy their apples. Ricardo passes on his new "habit" to his aunt who does the shopping for their family, and at his request, she buys more fruit for him to eat at snack time. The next month, when Ricardo celebrates his birthday, he brings apple and orange slices along with his traditional birthday treat to school to share with his classmates.

Mr. Barrow, the principal, invites the Youth Services Officer to the school to discuss the increased vandalism that is being experienced in the neighborhood and, most recently, at the school. James and Sarah in Mr. Van's fourth grade class report that there is a group of middle school students trying to recruit kids to join a special club. Part of the membership includes "decorating" a public building. Officer Garcia explains initiation procedures that are often part of gang membership and reviews refusal skills with the class. Javier's team chooses to go outside to practice their role-playing. Lucy, from the high school peer leadership class, assists Trang's group in asserting themselves among older kids.

On the way back to class after lunch, eighth graders Maria and Eugenia stop in the bathroom. Maria is startled by sounds that reveal that Eugenia is throwing up. Maria asks her if she is alright. Eugenia says she is fine and does this all the time to keep from getting fat. Maria doesn't reply but is reminded of something she read in her health class and is determined to look it up when they get back to class. After rereading the information on eating disorders, she confronts Eugenia the next day. After having Eugenia read the information, Maria convinces her to get help and offers to go with her to a clinic listed on the call-for-help bulletin board in their health class.

- **Students compare and contrast norms of behavior presented by the media with their reality.**

As part of an intercurricular study of families and the media's presentation of families, Mrs. Suslev takes the last half-hour of one day to show her third grade class an episode of *The Brady Bunch*. The journal topic for the next day is "Complete a Venn diagram comparing and contrasting the Brady Bunch with your family." Before they begin to write, the class brainstorms the "components" of the Brady family, such as a blended family, a cook, and a large house. On their own they will complete the diagram and write about their findings in their journals.

After analyzing a selection of advertisements by tobacco companies urging young adults to start smoking, Mr. Kanata's fourth grade students develop antismoking posters discounting tobacco company claims for "more fun and exciting lives, and feeling free." Max draws a poster depicting a teen smoking, not with shining white teeth, beautiful clothes, and clear complexion, but with yellow teeth, stained fingers, and burn holes in his blue jeans. Camilla, a recent Chinese immigrant who speaks very little English, draws a group of people actively involved in a game of soccer as a smaller group sits on the sidelines smoking.

Tommy lowers the lights as his eighth grade class prepares to watch their recently completed video of "True Commercials." In commercial number one, Ryan brushes his teeth with the new sex appeal tooth paste and then attends the school dance, only to find he is not treated in any way special. Turning to the camera, Ryan says, "Toothpaste does help fight cavities but not fight off the girls." In Samantha's commercial she is seen washing her hair with a curl-enhancing shampoo, only to find out that after her hair dries it is as straight as ever. She turns to the camera and says, "Shampooing with this product does keep my scalp clean but it takes more than shampoo to get curls." Jahmal's commercial is for running shoes. He pays $125 for shoes to wear to basketball tryouts. Confident that he will get a place on the team, he has not practiced all summer. After tryouts, he finds himself on the second string. Speaking directly to the camera, he says, "Good shoes are important on the court, but only practice gets you there."

- **Students participate in activities that help them recognize the impact of marketing on their choices of products.**

Ms. Gireaud shows three Band-Aids to her kindergarten class. One is covered in dinosaurs, one portrays a Sesame Street character, and one is a simple flesh color. "What do we use Band-Aids for?" she asks. After eliciting the response that they are used to protect a wound from infection or to stop bleeding, she asks which Band-Aid they would rather use. On a chart, she records, by show of hands, how many would prefer each type. The dinosaur Band-Aid is the clear winner. Now Ms. Gireaud asks students who chose the dinosaur Band-Aid why they chose that one. "I saw it on the TV," says John. Through discussion the teacher draws out from the students that they have been influenced by TV advertising. And with further discussion, students come to the conclusion that the plain Band-Aid serves the same function as the ones with designs.

As part of Miss Gray's consumer awareness unit, sixth graders Bill and Joey research convenience stores to find the location of candy in the stores. Susie and Leanne discover that in most large markets candy displays are adjacent to the check-out counter. Leslie and Fae discover that cereals with high sugar content are placed on the lower shelves of the supermarket. Stephanie and Roberto find in-store bakeries and notice that the smell of pastries and fresh baked bread is very strong. Estella and Jesus notice that special lights are placed in the produce section and make the fruit and vegetables look especially shiny. Mike and Bui are especially surprised to find a number of product containers that are in the same shape as smokeless tobacco tins. Each team writes a letter of suggestion to one of the stores they had visited.

Seventh grade students generate a list of what they think are the ten healthiest cereals. Soon after, the teacher brings in the ten cereals on the list. In small groups the students fill out a questionnaire about the ingredients in each cereal. Students input this information into a computer which produces a comparative bar graph. Students are amazed to find that some of their choices have higher fat/sugar contents than they had expected. In many cases the cereals have "healthy" names but are not healthy foods. After having fun tasting the different cereals, the majority of the students find the cereals with the lowest fat/sugar contents to taste just as good. Students plan to use this information in a variety of ways. Jaime wants to try the lesson with his little brother. Ronda hopes to encourage her family to try a different cereal, and Kim plans to begin eating breakfast.

Performance-Based Assessment Within a Healthy School/Community Environment

The comprehensive health program includes performance-based assessment focused on behavioral outcomes for students and staff within a healthy school/community environment.

- **Using critical thinking skills, students become informed about and access available health services.**

Maritza is a student in Mr. Singh's third grade class. After the class has grade-wide hearing screening, they read about and discuss the continuing need to have vision and hearing screening throughout life. As a follow-up, Mr. Singh makes available a list of local agencies which offer free vision and hearing screening. "But Mr. Singh," questions Maritza, "my parents speak only Spanish. Is there a place they could go where they can get screening done?" After investigating, Mr. Singh discovers that TriCities Health Clinic can provide speakers of a number of different languages prevalent in their community. He passes this information along to the entire class. At home, Maritza discusses the free hearing and vision screening with her mother and father and convinces them to go to the clinic.

Excited by their visit to their school's Healthy Start Center, Miss Peterson's sixth grade class decides to research other health services available to children and families. LeShawn and David interview local pediatricians. Denise calls the county health department and makes arrangements to visit a well-baby clinic. Samantha calls the number for the local Tobacco Coalition to find out about cessation classes for her mother. On Health Services Awareness Day, each student group presents its report orally to the class. The written reports are handed into the teacher. The day concludes with a health panel presentation with students taking the roles of various health care providers. The panel discussion includes health care access and available community resources. The Parent Club volunteers to have a chart of the local resources printed for each classroom.

Eighth grade teams of two are each given a scenario. Scenarios include a father who is an alcoholic, a pregnant teen, a student with very bad acne, an abused child, a teenage runaway, a suicidal friend, a teen confused about her sexual orientation, and others. The teams are directed to find available health services specific to the needs in their scenarios. Using the local phone book, Rachel and Anita find a list of local dermatologists. Calling each one, they find that Dr. Odou offers a free initial consultation and is also willing to come to the class as a guest speaker. Norbert and Terry go to the principal's secretary with their scenario of a suicidal friend, and she refers them to the district psychologist. They find that free counselling is available at the local mental health clinic. All the results are put in a special self-help file cabinet which is kept in the school library.

- **Students explore the wide variety of health-related careers.**

Students in Mr. de Leon's kindergarten class take a walking field trip to the local hospital. They tour various areas and meet nurses, doctors, an X-ray technician, a dietitian, and a physical therapist. Each professional gives a short talk about her or his job at the hospital. The next day, students produce a class mural depicting all the people they met at the hospital. They dictate sentences to Mr. de Leon about the jobs they observed, and then students copy these on the mural. After presenting the mural to the hospital, Mr. de Leon encourages his students to take their families to the hospital to see their work on display in the lobby.

Mrs. Sirias' fourth grade has been corresponding with Weston Hospital staff in an information exchange program to encourage students' interest in health careers. Holly has been writing to the hospital dietitian to find out how she plans healthy meals for patients. Tom is interested in heart health and has been writing to one of the nurses in the cardiac unit to find out how he helps his patients to recover from heart problems. Ben wants to know about hospital laboratory work and is writing to a lab assistant to research some of the tasks that are done in a lab to diagnose patients' conditions. Students share their letters with each other during presentations. When Mrs. Sirias' class goes on a field trip to the hospital, they are able to meet some of the hospital "pen pals" to get an eyewitness view of the hospital staff's work places. Later, Mrs. Sirias arranges for the hospital staff members to talk to the class on their roles at the hospital and how they prepared themselves for the jobs.

Mr. Berger's sixth grade students make a list of health careers. Ronald is the recorder, and students name people they know who work in a health-related field. Elizabeth says, "Dr. Ezekial is my pediatrician." Vincent calls out, "My grandma has worked at the hospital as a volunteer for years." Masiel asks, "How about the pharmacist?" Danny recalls, "When my mom was pregnant, someone took a picture of the baby inside her. What do you call that person?" The ROP director, Mrs. Perez, has been invited as a guest for this discussion and assists the students in broadening the list. The following day Mrs. Perez meets the students in her career office at the high school in order to research the training required to enter the health-related careers they have discussed.

- **Students and teachers monitor and evaluate their health-related knowledge, behavior, attitudes, and skills as an ongoing integral part of instruction.**

Early in the month of October, Mrs. Fuoco's second grade class brainstorms ideas, which are then written on a large piece of butcher paper with the title, "What we know about fire safety." Next to that is another piece of paper on which they write, "What we want to know about fire safety." During the ensuing weeks, the class covers such topics as "stop, drop, and roll", possible escape routes from their homes in the event of a fire, the importance of smoke detectors, not to play with matches, elements of a fire, and how to crawl low under smoke. At the end of October, they add a third piece of paper, which lists "What we have learned about fire." They are surprised by how much knowledge they have gained. In cooperative learning groups, students choose topics related to fire safety and create posters for the city fire department's poster contest.

As part of the outdoor education experience, Mrs. Bennett's sixth grade class spends several weeks anticipating being at the coast for a week. Zella and Lori research safe food preparation methods in the outdoors and work with the school cafeteria manager, Mrs. Lum, to choose a menu that follows the food pyramid. The information is recorded in the students' personal notebooks. Lonnie and Dong go through the field trip first aid kit with Mrs. Karamoto, the school nurse. Mrs. Karamoto gives the students appropriate hygiene tips. On the first night hike, Peter is surprised to find that his eyes adjust to the dark in just 37 seconds. The next day, a "buddy blindfold hike" has students identifying natural objects by touch and smell. Jose's notebook, written with the assistance of the bilingual aide, Lourdes, contains comparisons and contrasts of life outdoors and life at home. Jane finishes illustrating her notebook and gives it to Matt to proof.

Having studied communicable diseases earlier in the school year, students in Mr. Hynds' seventh grade health class practice what they have learned when flu season arrives. They wash their hands before and after using the bathroom and before meals. They use disposable tissues and keep their desktops free of litter. They are careful not to share food or drink that has touched their mouths. They bring home pamphlets to share with their families on the advisability of flu shots.

Melinda is careful to stay home when she has a fever so she will not spread her flu to others at school. The district nurse visits Mr. Hynds' class and teaches the students how to take their own temperatures. One day when Mr. Hynds' voice sounds scratchy, the students recommend that he drink some hot tea and orange juice and plan a day of bed rest.

- **Students and teachers use assessment to evaluate, adjust, and plan future activities that best promote healthy behaviors for all students.**

Ms. Roosevelt's second grade class learns that they have placed last in a contest to keep their primary wing bathroom clean. The school custodian, Mr. Thornton, comes into the classroom and he and the class discuss the need for cleanliness as disease prevention. They brainstorm ideas about how to encourage other classes in the primary wing to do their part to keep the bathroom clean and tidy. Bridget, Dawan, Federico, and James write a play about germs lurking in an unclean bathroom. This play is presented individually to the other classes in the wing. Another group, Kiran, Isack, Adam, and Melizza, are elected to visit the other classes in the wing on a monthly basis to briefly remind students about the importance of keeping the bathroom clean. The following month, Mr. Thornton rewards Ms. Roosevelt's students with stickers for their improved efforts at bathroom cleanliness.

At the class meeting one week after the school health fair, Mr. Blackwell's fifth grade class analyzes the different stations that were available. Misty and Martin really liked the blood pressure station and checked out the blood pressure cuff to measure their family members' blood pressures. Robert remarks that his grandfather is on blood pressure medicine and that his whole family has adopted healthier life-styles to avoid heart disease. Paulo thinks the Dairy Council's information is important but that it would be nice to offer healthy snacks to health fair participants as well as information. Joyce volunteers to ask her uncle to donate fresh fruit from his produce company for next year's fair. Everyone leaves the class enthusiastically talking about next year's event.

The students in Ms. Tomayo's eighth grade class are sending a get well card to Megan. She broke her arm when she stumbled over a crack on the blacktop at school. Ms. Tomayo asks the class what they want to do about safety on the school grounds. The class decides to walk around campus and survey and assess the repairs needed to provide a safer environment. Barry's team interviews the physical education teachers and inspects the equipment. Marsha's team goes into the restrooms to check for a clean, safe, healthy area. Nora's team inspects the lunch tables and eating area. When the class comes back together to compare notes, they agree the most dangerous area of the school is the field, which has many hidden sprinkler heads, which are causing students to trip. Students write a letter to the principal, who puts in a work order to the district maintenance crew. The principal also agrees to meet with the class to discuss their other concerns and develop a plan of action.

- **Students' progress is assessed formally and informally via a variety of assessment techniques, including observation, individual and group projects, portfolios, and community/family-based activities.**

In May, all three third grade classes at Walters Elementary decide to stage a health fair to educate their parents and school community about the health issues they have been studying throughout the year. A group of students in Mr. Kato's class staff a station about the effects of drinking alcohol. Mr. Kato is pleased with the students' visual displays, literature they have collected from local government agencies, and a game they have made for the parents to play. Surveys completed by parents and community participants at the end of the fair give favorable comments on the students' efforts and suggestions for changes that could be made to ensure the success of future such endeavors.

At Open House, Mr. Cavanaugh's sixth grade room is filled with examples of his students' work. Rosamaria's mother is particularly impressed with the portfolio her daughter has compiled about her health education studies. Photographs centered on one wall show the students engaged in a variety of health-related activities, including their recent participation in National Fitness Day. Class cooperative teams prepare healthy snacks which are presented beside copies of recipes that everyone can take home. Colorful mobiles hanging from the ceiling admonish visitors about the risks of substance use, and a class-compiled list of support services hangs next to the door. Also next to the door, Rosamaria points out to her mother another class project, a laminated copy of emergency escape routes.

As part of the school's ongoing discussion on creating an environment for student success, the staff at Pacific Middle School is meeting to share how they have been informally assessing students in their classes. Mrs. Acosta has brought a sampling of the projects from her health classes. Among the many projects she shares are Jamahal's video on seat belt safety, Eileen's comic strip about her life in a wheelchair, Cindy's laser disc video documentary on cancer and food, the *Guide to Safe Dates* made by Aaron, Kim, and their classmates, Koichi's family health tree, and Mario's graph on smoking. She also provides several health journals and personal shields which were developed by her students.

- **Students and staff assess the degree to which the comprehensive school health system supports the development of healthy behaviors and apply these findings to program planning.**

The results of the fifth grade health-related physical fitness testing at Washington Elementary indicate to Mrs. Spengler, the PE specialist, that physical fitness intervention needs to begin at an earlier grade level. After consultation with students and staff, she develops a kindergarten through third grade program that includes flexibility, muscular strength and endurance, and cardiorespiratory fitness. She also instigates "primary fitness time" each day when all kindergarten through third grade classes congregate on the primary playground to exercise to music. With the help of the district media coordinator, Mrs. Spengler and students produce a video, starring students exercising, to be shown on rainy days and for students to check out for home use.

The schoolwide council meeting at Jackson Elementary is held weekly at lunchtime to discuss the schoolwide health program. The upper grades' representatives, Jose, Gwen, and Theresa, are especially pleased with the conflict management patrol team and suggest the addition of three members. Gwen mentions that her mother, an aerobics instructor, is willing to hold classes Thursday afternoons free of charge. Ms. Jens asks Gwen whether her mother might be interested in running an early morning class for staff for a small fee. Jose states that his class has researched the availability of nonfat yogurt bars to replace Popsicles and submits a price sheet. Gwen suggests that research be done on student interest in yogurt bars before going any further. Theresa remarks that her class would like to sponsor a walk-a-thon during Red Ribbon Week. Robin, the second grade representative, suggests that there is a need for more recycling bins. The needs and wishes chart is addressed by all participants, and the chairperson agrees to take the chart to the principal.

Interested staff and students meet with the principal, Mrs. Robles, to discuss ways to create a healthier campus at Holstein Middle School. After listing all the areas that need work, they agree to focus on healthier food choices. Initial discussion shows that there are many things which could be done at the school to support making healthy food choices, including replacing the soft drink machine with a juice machine, surveying the students to find out which healthy snacks they would purchase from the student store to replace the present high sugar/fat selections, developing, with the help of the food services department, a lunch menu that offers meals that are lower in fat, promoting a healthy lunch club, assisting teachers in finding rewards other than candy, and finding a viable fund-raiser that is not based on candy or other high sugar/fat food sales. The committee agrees to investigate each option more thoroughly, so that at the next weekly meeting they can determine the next steps.

Professional Practices

The school's faculty and administration recognize that effective health education is supported by a strong schoolwide comprehensive health program. Success in both these programs is a long-term process which requires a time commitment, organizational focus, and resources. Teachers and other staff develop a long-range plan for fully implementing the comprehensive health program into the school program. They:

- Commit time to talk about the comprehensive health program, how to effectively teach health education, and how to effectively implement and support the comprehensive health program.
- Develop schoolwide outcomes for the whole child, becoming involved in school restructuring efforts at the earliest opportunity.
- Refer to the *Health Framework* for information on short-range and long-range planning.
- Survey their staff to identify areas of expertise, interests, and needs in the teaching of health education.
- Create a developmental, sequential, articulated curriculum with essential learnings for each grade level aligned with the *Health Framework* and inclusive of all unifying ideas and content areas.
- Set high expectations for effective health education instruction.
- Visit other comprehensive health programs to learn new ideas and to affirm what they are doing correctly.
- Plan for the inclusion of technology in their instructional delivery and assessment systems.
- Participate as members of the school site and SIP councils.

- Assist in the decision-making process to allocate money and provide for release time for the purchase of materials and resources for the comprehensive health program and professional development in the area of comprehensive health. Sources of funds could include the general school budget, School Improvement funds, fund-raisers, the PTA, community resources, and grants.

- Purchase materials and supplies necessary to improve the comprehensive health program, supplemental materials, textbooks, and software.

- Use release time to explore grant opportunities and write grant proposals.

Teachers and other staff participate in ongoing professional development to enhance their ability to be effective role models to students. They:

- Seek long-term professional development opportunities provided by the California Health and Physical Education Subject Matter Project.

- Seek long-term professional development in specialized areas:
    - Conflict resolution
    - Cooperative learning
    - Instructional technology
    - Positive classroom environment
    - Language development for English learners
    - Campus safety
    - Instructional strategies
    - Teaching and learning styles

- Become actively involved in, attend conferences of, and make presentations at:
    - American Alliance for Health, Physical Education, Recreation, and Dance
    - American School Health Association
    - California Association for Health, Physical Education, Recreation, and Dance
    - California Alliance of School Health Educators
    - Regional and local health education workshops

- Attend California School Leadership Academy (CSLA) training.

- Enroll in relevant college courses to expand or renew knowledge and skills.
- Work with mentor teachers, district and local comprehensive health experts, and peer coaches. Participate in cross-training and case management teams with school-linked service providers.
- Subscribe and contribute to national and state health education publications, such as:
    - *CAHPERD Journal/Times*
    - *Journal of School Health*
    - *American Journal of Public Health*
- Connect and contribute to PrevNet, the California Department of Education's comprehensive health electronic bulletin board.
- Obtain and review health education publications of the California Department of Education.
- Meet on a local or regional basis with teachers from other schools to discuss student work, instructional practices, curriculum, and new developments in assessment.

Teachers and other staff participate in ongoing personal development to enhance their ability to be effective role models to students. They:

- Participate in an active, healthy life-style, both in and out of the school setting.
- Act as school site wellness coordinators.
- Participate in personal development programs to improve their own health behaviors, such as smoking cessation or weight reduction programs.

Teachers maintain a student-centered approach and use classroom practices that enable all students to be successful. They:

- Use a variety of teaching styles based on individual learning styles and a deep understanding of the *Health Framework*.
- Use personal, local, state, and national "real-life" issues in health to promote learning.

- Engage students in an interactive relationship and give students frequent opportunities to participate in individual and group projects, activities related to real life, and inquiries related to investigation.
- Use exercise as a learning opportunity, not a disciplinary measure.
- Use technology to enhance the learning process by providing multimedia learning experiences.
- Maintain an ongoing awareness of available instructional resources supporting the curriculum, such as those available from the Healthy Kids Resource Center, community organizations, and publishers, and use the instructional resources that best support student learning.
- Frequently meet in cross-curriculum and cross-grade groups to plan and monitor implementation of the curriculum, with attention on appropriate sequencing and connecting the curriculum across curricular areas, across grade levels, and between components of the comprehensive health program.

Teachers welcome parents and the community as partners in the development and implementation of the comprehensive health program. They:

- Conduct parent workshops to help parents understand the major concepts and purposes of the comprehensive health program and their roles in this program.
- Along with school administration, involve parents and community members in the development of school plans and policies related to the comprehensive health program.
- Link classroom instruction to other health promotion resources in the school and community.
- Send newsletters to parents or include information regularly in the school's parent bulletin on comprehensive health program activities and benefits of good health practices; provide parent groups with information on the effect of good health practices on students' ability to learn.
- Invite parents to attend and participate in comprehensive health activities, such as at parent nights or health fairs.
- Involve parents and community members in the review of instructional resources used in the comprehensive health program.

Teachers use a variety of performance-based assessment techniques to assess students and the program. They:

- Become familiar, along with the administration, with performance-based assessment tools for comprehensive health, such as student portfolios, rubrics, open-ended problems, journals, and student projects and performances.
- Base assessment and grades on essential learnings for the grade level, including using assessments based on actual health behaviors whenever possible.
- Assess the health needs of students and the community, and use assessment results in planning the curriculum and the comprehensive health program.
- Encourage students to assess their own work, conceptual understanding, and health-related behaviors.
- Work with other teachers and students to develop rubrics for student work and share these rubrics with students in advance of the assessment.

Health Education Resources

The following publications are available from the Bureau of Publications, Sales Unit, California Department of Education, P.O. Box 271, Sacramento, CA 95812-0271; (916) 445-1260.

Health Framework for California Public Schools, Kindergarten Through Grade Twelve, 1994.

The California Daily Food Guide: Dietary Guidance for Californians, 1990.

Choose Well, Be Well, 1982 (materials for various levels).

Family Life/Sex Education Guidelines, 1987.

Not Schools Alone: Guidelines for Schools and Communities to Prevent the Use of Tobacco, Alcohol, and Other Drugs Among Children and Youth, 1991.

Suicide Prevention Programs for California Public Schools, 1987.

Safe Schools: A Planning Guide for Action, 1989.

Toward a State of Esteem: The Final Report of the California Task Force to Promote Self-Esteem and Personal and Social Responsibility, 1990.

Toward Healthy Schools, 1994 (proposed).

The following organizations offer additional information:

American Cancer Society; check local telephone listings for local chapters.

American Heart Association; check local telephone listings for local chapters.

American Lung Association; check local telephone listings for local chapters.

American Red Cross; check local telephone listings for local chapters.

American School Health Association, P.O. Box 708, Kent, OH 44240; (216) 678-1601.

California Association for Health, Physical Education, Recreation and Dance (CAHPERD), 1501 El Camino Avenue, Suite 3, Sacramento, CA 95815-2742; (916) 922-3596.

California Association of School Health Educators (CASHE), 6020 Miles Avenue, Huntington Park, CA 90255; (213) 582-4450.

California Department of Alcohol and Drug Programs, Office of Alcohol and Drug Prevention, 1700 K Street, Sacramento, CA 95814-4037; (916) 324-4398.

California Department of Health Services, 714/744 P Street, P.O. Box 942732, Sacramento, CA 94234-7320; (916) 445-4171.

California Dietetic Association, 7740 Manchester Drive, Suite 102, Playa del Rey, CA 90293-8499; (310) 822-0177.

Dairy Council of California, 1101 West National Drive, Suite B, Sacramento, CA 95834; (916) 263-3560.

Healthy Kids Resource Center, 313 West Winton Avenue, Room 180, Hayward, CA 94544; (510) 670-4581.

Healthy Start Field Office (CRESS Center), University of California, Davis, CA 95616-8729; (916) 752-1277.

History–Social Science Criterion

Focus Statement

A strong history–social science program provides students with a core of historical and geographical knowledge. The social sciences and humanities are integrated throughout, with emphasis on ethics and democratic values. The program helps students to better understand themselves and others and to develop judgment, perception, civic pride, and responsibility. It fosters students' enjoyment of history, cultivating historical empathy and various perspectives of people of different times, places, and cultures.

The entire K–8 curriculum focuses on people, both ordinary and extraordinary. It should contain opportunities for interdisciplinary studies, where natural and logical, and a multicultural perspective reflecting experiences of men, women, and children of different ethnic, racial, and religious groups. The use of varied teaching strategies demonstrates thoughtful consideration of the most effective and efficient ways of engaging students with topics being studied. The curriculum is infused with primary sources and varied genres of literature, both of the period and about the period, including biographies, fables, poetry, and well-founded historical fiction. A variety of assessment strategies includes peer evaluation and students' own assessments of their work.

The sequential curriculum described in the history–social science framework is the basis for the program. The "here, there, then" curriculum for primary grades, the fourth grade study of California history, including twentieth-century topics, and the emphasis on U. S. and world history at grades five through eight are coordinated so that the basic learnings of the framework's literacy strands are developed cumulatively over the grades. Major topics are studied in depth, and students are actively involved in learning history–social science, both independently and collaboratively.

In a strong program, students think creatively and develop abilities in such a way that they value themselves as more knowledgeable, discerning, critical, and participatory citizens. The talent of critical thinking involves the use of such skills as reading, writing, and speaking articulately and logically and utilizing relevant facts in forming opinions and evaluations. A strong history–social science program develops such skills cumulatively and specifically over the grades. Engaging activities allow students to apply knowledge to new or different situations, to judge how ideas impact human conduct, and to use history as example and analogy for issues in their own lives and in the world today.

Student Work

History and geography are at the center of the history–social science program.

- **Students connect the study of history (time) with its geographical setting (place).**

The recollections of community members are vital sources of information to help young children take their first steps into times past. Kenny's great-grandmother, who was born and raised in the local community and attended the same school as Kenny, brings in a picture of the original school building taken 60 years ago. She shares pictures, artifacts, and stories with the kindergarten class about her school days. The students, who know they will be making pictures of what they hear, ask questions such as "Did you play kickball when you were in school?" and "Did you have a car?" Working in pairs, students create "Then and Now" pictures with dictated captions. Abraham and Daniel work on what the school looked like then and what it looks like now. Jane and Maria draw pictures of what the students wore then and what they wear now. Other groups work on games the children played, what they ate, and so on. The pictures and captions are shared and posted in the classroom.

Spatial and relational skills are an essential base for developing geographic literacy. As an introduction to the basic concepts of "bird's-eye view" and relative location, first grade students listen to the picture book *As the Crow Flies* and student pairs meet to discuss what is meant by the term *bird's-eye view*. These thoughts are shared with the whole class. The students remove the top of a doll house and notice the placement of miniature furnishings. Working as a total class, the students tell the teacher what and where to put what they saw on a chalkboard chart which the teacher has begun by drawing lines to represent the walls. To prepare for making a map of the classroom, students take turns standing on top of a table and looking down at the objects throughout the room. Working in groups of four, students make their own bird's-eye view of the classroom. Betty, Raul, Kimi, and Leonard use rectangular and round blocks, tuna cans, and small boxes for their three-dimensional map. Lindsay, Anna, Aaron, and Sabrina draw the tops of tables and chairs. Charts are shared, and objects and location are compared for accuracy. Later, as students view pictures and illustrations in such books as Sarah Josepha Hale's *Mary Had a Little Lamb*, illustrated by Tomie DePaola, they use language skills to describe how school rooms were alike or different long ago.

Older primary students enjoy local history because of the familiarity of the region and the immediate connections they can make. In third grade, student groups study the people who settled the local community, including those of different ethnic, religious, or occupational backgrounds. For their topic, Luci, Martin, Joan, and Kaya choose to research the Portuguese who settled the outlying rural area of their town. They generate questions and, with teacher assistance, contact local descendants for interviews. Their questions focus on why Portuguese dairymen came here, the opportunities they sought, how the land features influenced settlement, and how the local geography compared with that of the Azore Islands. The interviews serve as primary source material for the group's report. The team prepares a community map showing where the Portuguese tended to settle. The four students decide how best to present their information: narration and charts, role playing, a diorama, a series of illustrations, or other means. To emphasize the concept of chronology, the groups make their presentations in historical order. As the other groups present their information, they add names of important people and events to a classroom timeline that indicates the growth and changes of the community.

In their study of California life in the 1850s, fourth graders Summer, Anna, Derek, Javier, and Natalia create a newspaper from the past. Using the word processing program on their classroom computer to develop the paper, they include articles about changes in the various regions of the state, jobs, hydraulic mining, interviews with famous and ordinary people who tell why they came to California, ads, and other features. The newspaper is published, and each fourth grade class exchanges newspapers with others in the district.

As Mesopotamian and Egyptian civilizations developed, people modified their environments and developed new technology to solve their problems with the river floods. In order to understand the manual labor required for everyday needs and wants, sixth grade student partners develop flow charts that show the operation and completion of various tasks. Caleb and Kyle choose to research and show the operations of a shaduf; Cynthia and Lawanda choose the harvesting of papyrus and making a scroll; Tim and Alejandro, making a papyrus boat. Partners prepare both written and oral reports for their flow charts. Oral reports are co-presented in class, and the written reports are displayed alongside the charts in the school library.

- **Students use a multicultural perspective to reflect on the experiences of different racial, religious, and ethnic groups.**

In the unit "People from Many Cultures, Now and Long Ago," second graders study biographies for positive examples of human achievement and character. After reading the book *A Weed Is a Flower* by Aliki, student groups enact a tableaux showing George Washington Carver in a "Moment in Time" as an artist, a plant doctor, a scientist, and a humanist. Martha, Joey, Roy, and Paulette depict Carver hosting a dinner. The teacher quizzes them about Carver's unusual menu. After the tableaux, partners meet to discuss the question, "How did Carver make a difference in the lives of others?" Their sharings are recorded by the teacher and reviewed with the students.

Students need to understand the topic of slavery from a historical, worldwide perspective. At the beginning of the sixth grade course, the teacher explains that slavery will be a common topic of study in all civilizations studied and that each student group is responsible for helping to complete a comparison "matrix chart" during the year. Barry, Alma, David, Zack, and Athena research slavery in Sumer, focusing on areas that will help complete the Sumer part of the matrix. A variety of materials are used in research, including reference books, supplementary textbooks, and Milton Meltzer's *All Times, All Peoples: A World History of Slavery*. Near the end of the year, when the last group has completed the matrix, a "think, pair, share" activity centers on open-ended questions: "How is slavery a violation of human rights? Why has it taken so long to rid the world of slavery?" Individual students first think about the questions and then meet with partners. The partners share their responses with the class while Kelly acts as leader and Denzil as recorder at the chalkboard.

Seventh grade world history students read the novel *The Captive* by Scott O'Dell, which explores the relationship between colonizing Spaniards and the native Maya. They also view the instructional television series "The Second Voyage of the Mimi." To make the learning more personal, the students perform a tableau in which each student takes a role from the book and in a frozen moment explains to the class what the thoughts of that character are at that particular moment in the story. Merle becomes a Mayan priest, Maxine becomes the wife of a tribe member, and Uyen becomes a Spanish explorer.

- **Students consider multiple perspectives and analyze controversial issues when studying major topics, people, and events.**

The changes within local communities provide "windows of opportunity" for exploring multiple perspectives. In one town, a seventy-year-old landmark, a civic clubhouse, has been earmarked for destruction. After reading and hearing articles clipped from a local newspaper, the whole third grade class brainstorms questions for scheduled visitors. A member of the local historical society visits to explain why the society wants the clubhouse preserved. A planner from city hall explains why city planners believe destroying the building is necessary. After the visits, students work in teams of three to devise possible solutions to the problem. The teacher leads a class discussion to arrive at a consensus on possible solutions. Students then write letters to the planning commission and city council, conveying their concerns and ideas.

Dramatization is a lively way of exploring multiple perspectives. In the fifth grade, when students study the Boston Massacre, they enact a play version of the murder trial of British soldiers involved in the massacre. Sylvia plays the role of the judge; Jason, a wounded participant; Lynette, John Adams; Joseph, the captain of the guard; and classmates play other witnesses, court officials, and active spectators. As an extended activity to the play, groups of students write summaries of the perspectives of those involved. For example, Lydia, Jason, Kevin, Ritsuko, and Eileen prepare a summary of John Adams's defense of the soldiers; Paulette, Nyle, Joseph, Joaquin, and Maria prepare a summary of what Crispus Attucks might have said regarding the massacre. The summaries are written on charts and mounted around the room for easy comparison. After a "grand conversation" regarding the summaries, students write individual essays on the topic "My Opinion of the Boston Massacre." These are revised, typed on a word processor, and put into a class book of ongoing written works relating to history–social science.

A part of their Civil War studies, eighth grade students decide to have a Debate Day on topics related to the war. Topics include tariffs and trade attitudes, states rights and popular sovereignty, the Dred Scott issue, northern and southern views of slavery, and the Missouri Compromise. Students research their topics in groups and individually, using primary sources such as Julius Lester's *To Be a Slave*. Mike and Alex become living historians in their debate about John Brown and Jefferson Davis. Leticia's group presents the northern viewpoint, and Ryan's group assumes the southern viewpoint in their debate on the issues of the Missouri Compromise. Students not on the debate panel prepare questions ahead of time to ask the panel and write their new realizations in their history logs. Students evaluate the panel using a rubric to analyze their presentation skills and accuracy of facts.

During the "Linking Past to Present" unit for eighth grade, students can gain a stronger impression of some of the social conditions faced by African-Americans in the South. As they walk into their classroom, Julie and Cassandra are greeted by their teacher with the statement that anyone with a first name starting with J is to sit in the back of the room. With a smile Julie moves to the back, and Cassandra sits up front. As lessons begin, the "J" students get drinks only after all other students are finished. Julie and Cassandra can only look at each other and not talk. "J" students are at the end of the line and are the last to go to lunch. After lunch students form cooperative groups, with at least one "J" student in each group to react to each other's feelings during the morning and to discuss how people who were segregated in the South felt. This activity is an "into" strategy for reading excerpts from *Childtimes,* a three-generational memoir of African-American women.

- **Students are living historians; they investigate, research, and analyze, using primary and secondary source materials.**

After hearing such stories as "Dakota Dug-out," "From Me to You," "The Potato Man," and "They Were Strong and Good," second graders become living historians by preparing a family history. Students and their parents decide whether the child is to do a history of the student's family, the family history of a neighbor or relative, or that of a family from personal experience. Mario and Anna collaborate to devise questions for an interview to find out where their families came from, how long they have been here, and why they came. For her oral report Anna brings family photos, an old letter, a hand-carved toy, and a scrapbook as artifacts. Mario presents his report by enacting his great-grandfather. Eileen tells the class what her grandmother told her and, based on her grandmother's descriptions, has drawn pictures of places and artifacts remembered but no longer in existence. Students use outline maps to complete narrative maps of the places mentioned in their histories. As a result of this project, Mario, Anna, and their classmates are better able to interview a community member when studying the unit "People from Many Cultures, Now and Long Ago" later in the year.

After studying Lewis and Clark's expedition, fifth grade students experience their journey by viewing laser discs on national parks and "Animal Pathfinders." While viewing, the students stop to discuss the journey. Some students pick Merriweather Lewis and William Clark and keep a journal of what they are observing for Thomas Jefferson. Others write an imaginary diary from the viewpoint of Sacagawea. Their journals include drawings of the land, plants, animals, and peoples, historic dates, and short descriptions of the vast new land. They also include narratives describing the hardships, diet, weather, unexpected events, conversations with their companions, and similar events. The activity develops historical empathy based on research.

Seventh grade students study life during the Middle Ages. During their unit study, students examine facsimile primary and secondary sources on the "Black Death" or bubonic plague. The class is divided into jigsaw expert groups. The groups read, examine, and discuss such documents as an Inquisition writ, a banner, a health book of the fifteenth century, and an engraving. One member of each group records their findings and reports to the class in an oral presentation. The primary source materials used are found in the instructional kit *The Black Death*.

After eighth grade students have studied the Gettysburg Address, they write a letter to a friend as though they had been observers when Lincoln made his Gettysburg Address. Miranda uses *The Battle of Gettysburg* by Neil Johnson for better information about what the battlefield and the battle itself were like. Mariel displays historical empathy as she describes the reaction of the audience to the speech. After finishing their letters, some students choose to read them aloud to the class. After considering the rubric for letter writing, some students choose to put their letters in their exemplary work portfolios, while others add them to the Civil War display in the room.

The history–social science program demonstrates the integration of history with the other social sciences and humanities.

- **Students use literature of and about a period to better understand historical times, places, and people.**

While reading biographies of such figures as Abbie of the Lighthouse, Jan Matzeliger, "Snowshoe" Thompson, and Eleanor Roosevelt, Marcus meets with his partner Javier to discuss the books they have been reading–what the books are about, what they admire about their subjects, and how these famous people made a difference in the lives of others. Marcus and Javier then relate to their second grade classmates what each partner has shared with the other. When they have finished reading their books, they prepare a simple outline (title, author, who the person was, what the person accomplished, and what the student admires about the person) for an oral report to the class. They give their oral reports to their partners before presenting them to the entire class. The presentation of the reports culminates the second grade unit "People from Many Cultures, Now and Long Ago," reflecting a variety of people, cultures, times, heritages, and accomplishments.

As a result of reading biographies such as *Young Frederick Douglass: Fight for Freedom,* by Laurence Santrey, third grade students examine more deeply the lives of famous people who took risks and improved the lives of citizens. Moses, Aaron, Kendrick, Alicia, and Vanessa make their own costumes for a "Moments from the Past" simulation. The students portray Frederick Douglass, Abraham Lincoln, Harriet Tubman, Richard Allen, and Sojourner Truth in a "round" table reader's theater regarding their roles in slavery and the freedom of Negroes. Sam appears as Paul Laurence Dunbar, telling about his life and reading aloud a favorite Dunbar poem. The presentation is videotaped and traded with other classes.

In small groups, fifth grade students compare and contrast the cultures in *Immigrant Kids* by Russell Freedman. After reading excerpts from *Amos Fortune, Free Man* by Elizabeth Yates and viewing the video "Bound for Glory," they engage in exploratory talk and motion to voice why and how these people came to America, whether their coming was voluntary or involuntary, and what freedoms were granted to each on arrival in America. The students construct a pictorial timeline of historical events at the time of their arrival. They stand under each event on the timeline and give short excerpts of the event and how it affected them.

Sixth graders Carla, Stefan, Riki, Felicia, and Carmen read *Maroo of the Winter Caves* as supplementary literature. They apply what they learn during history–social science (e.g., hunting, gathering, cave art) to confirm or dispute the depiction of prehistoric life in the novel. They report their findings to the class and hear peer reports on similar novels such as *Time of the Bison, The Boy of the Painted Cave,* and *A Way of His Own.*

- **Students consider the impact of such factors as geography, economics, religion, and culture when studying a historical period or event.**

When first graders study about the Pueblo during the unit "Developing Awareness of Cultural Diversity, Now and Long Ago," they use such resources as *National Geographic,* Marcia Keegan's *Pueblo Boy: Growing*

Up in Two Worlds; and Scott Warren's *Cities in the Sand* for photographic information on Pueblo life. They hear poems written by Pueblo children and collected in Ann Nolan Clark's *In My Mother's House*. Students draw pictures of one aspect of Pueblo life and geography which they have chosen: clothing, trees, crops, animals, the guaco, irrigation, construction, and so on. Tyrone uses photographs for reference in drawing his picture of the aspen trees which the Pueblo used to make vigas for their houses. He memorizes the four-line poem about the aspen contained in *In My Mother's House* and recites it when he shows his drawing to the class. He is able to explain that the aspen grow in the mountains, that the Pueblo had to travel to the mountains to cut them, that they used a flatbed truck to transport them, and that the aspen logs help make their homes strong and sturdy.

In the fourth grade study of the missions, students discover the impact of religion on geography. They brainstorm a list of towns and cities that begin with "Santa" or "San." Partners locate them on maps and use scale in determining approximate distances to the nearest mission sites. With assistance, including that of Spanish-speaking peers, they translate place names. Partners also conjecture why places were given these names. Their ideas are shared and discussed with the teacher.

Sixth grade students select a decade in history for the purpose of producing a television news show about that decade. Some students view excerpts from the series "Newscasts from the Past" as examples or models. The students decide on events to be covered, including sports and entertainment, fashions, food, art and architecture, use of leisure time, music, and national and international events. A rubric is developed containing criteria for the quality of presentation (e.g., eye contact, projection, use of stage or space) and the quality of research (e.g., completeness, accuracy, organization, cooperation). The video is shared with parents and other classes.

Eighth grade partners have been given different primary source materials that relate to the framework strand of "National Identity." Phuong and Paul are given a copy of a letter written by George Washington to a newly founded Jewish congregation, welcoming them to the fledgling republic. The two eighth graders draw conclusions and make interpretations, supported by passages from the letter as well as their prior knowledge. They share their thoughts with their classmates, who make similar reports. Together the whole class devises themes or "umbrella statements" that identify the ideals or values evidenced by the materials they examined. This is an "into" strategy for the lesson "The Bill of Rights" contained in the textbook *A More Perfect Union*.

- **Students study dance, drama, music, and visual arts to better understand a historical period and to better develop cultural literacy.**

  After reading or hearing such books as *A Picture Book of Harriet Tubman*, *Follow the Drinking Gourd*, and *The Story of the Underground Railroad*, third graders Kim and Martin listen to the song "Swing Low, Sweet Chariot" and conjecture how the lyrics might be a "secret code" for the Underground Railroad. Along with several other students, they write and perform a skit about the Underground Railroad. The music teacher helps them learn and perform similar songs of the period such as "Go Down, Moses," and "Nobody Knows the Trouble I've Seen." Parents and other guests are invited to the performance.

  To culminate the seventh grade study of "Europe During the Renaissance, the Reformation, and the Scientific Revolution," students select a famous person from those eras to research. They choose to present their findings in a creative way: an enacted monologue, a "History Day" type of exhibit, a portrait with biographical clues depicted in the background; a poem; a videotaped interview; a mock journal; or other means. Paolo chooses to make an exhibit on Johannes Kepler; Kalissa portrays Isabella d'Este; Millie selects Sir Francis Bacon; and Paul draws an oil pastel of William Shakespeare, referring to the Chandos and Droueshout portraits to form his own concept. Kara, who takes private dancing lessons, chooses to be the French dancing master Thoinot Arbeau and performs a simple version of an allemande, accompanied by a recording of authentic sixteenth century instruments. The creations are shared "chautauqua" fashion, with students stationed at tables or booths set up around the edges of the cafeteria. Parents, teachers, students, and other visitors move to and from the various table areas. They hear the presentations, ask questions, and engage presenters in talking about their topics and projects.

The history–social science program is enriched by the correlation of content with other subject areas.

- **Students use skills acquired in other subject areas to facilitate their understanding of history–social science.**

  In the unit "Our Nation's History," third graders study the legends, folktales, tall tales, hero stories, and lore of the United States. In one district, classes study *Pecos Bill* for "core" literature in language arts class. As an extended activity, Randy, Tia, and Gina research the life of a real cowboy, African-American Nate Love. They report their findings to the class: who he was, when he lived, what hardships he faced, what he achieved. Another team's research results in their map showing routes of cattle drives between Texas and Montana. Other teams make reports on such topics as Charles Russell, Frederic Remington, authentic cowboy poems and songs, Annie Oakley, Buffalo Bill, Sitting Bull, and daily life of the cowboys. In this way reading, writing, speaking, and listening are applied to history–social science content.

The memorization and performance of poetry helps students develop oral language skills, familiarizes them with language of different styles and times, and helps them retain memorable lines reflecting history, lore, and national ideals. During the study of the colonial era, fifth graders memorize Phyllis Wheatley's "Should You, My Lord" after studying the poem, its author, and the circumstances of its creation. During the "War for Independence" unit, the class memorizes "Paul Revere's Ride" by Henry Wadsworth Longfellow. In scripting the poem for a choral reading, the class works as a team to determine which voice timbres, dynamics, and tempos best suit different portions. A similar script is prepared for Ralph Waldo Emerson's "Concord Hymn," after students have heard and viewed Neil Johnson's picture book *The Battle of Lexington and Concord*. The three poems are presented as choral and unison readings at a parent night program.

In sixth grade science, students are learning some of the laws of physical science by analyzing levers and inclined planes. In history–social science, Gladys and Denzil formulate a theory as to how these laws and machines might have been used in building the pyramids. In their presentation to the class, they describe specifically the processes that might have been used and formulate unanswered questions that will probably remain mysteries.

- **Students use knowledge and skills acquired in history–social science lessons to enhance what they are learning and doing in other subject areas.**

After hearing a series of African folktales and viewing illustrations depicting African masks and designs, first graders Amy and Yehudah make masks as an art activity. As a language arts extension, they write poems about their masks. Jennifer, Amelia, Derek, and Kayla act out a favorite scene from one of the folktales.

Third graders Temeka, Natalia, and their classmates learn American folk and patriotic songs such as "There Are Many Flags in Many Lands" and "The Night Herding Song." The entire class performs "Our Nation's

History Through Songs" for an open house. Murals and screens provide a "set" for the songs, which are introduced by students enacting the roles of the composers or those who first performed them. While preparing the songs and the murals, groups of students use textbooks, picture books, art prints, photographs, and videos for images and information used in the performance. The program is rehearsed so that students show significant achievements in the arts: good singing habits (e.g., diction, breathing, posture), mastery of simple descants, unified composition in the murals, ability to mix colors, and appropriate overlapping to show depth.

The arts can help establish a sense of time, place, and mood of a historic period. A recording of authentic folk music from the ranchero period is played as background while the fourth grade teacher exhibits paintings of early Spanish rancheros, missions, and landscapes around the room. Each picture is placed above a piece of large chart paper. Dante remembers the music from the music lesson last week. The Spanish words and the tempo and rhythm of this music are like that of the Spanish dance they watched. The teacher connects words that they used when talking about the dance and music to words they use in looking at the paintings such as rhythm, movement, balance, space, composition, form, harmony, and texture. The class is divided into six groups, and each group is given a marker to write words, comments, and questions on the chart below the paintings. Dante and his group note what they observe in the paintings regarding the time period, place, color, landforms, architecture, composition, vegetation, and use of art media. Sabu likes this process because it allows him to express himself without the intimidation of raising his hand in front of the group. Each group moves from painting to painting until comments, feelings, ideas, and questions have been added to all charts. The charts develop students' understanding of the time and place from the students' perspectives. They are reviewed together, and other ideas and questions are added. Comparisons of impressions and ideas add to the information; questions lead to research in areas of interest to the students. These charts are used as "quick writes" for later writing. Using the ideas on the charts, the art prints, the discussion, and the ranchero music, Dante can imagine the time and place of the Spanish landowners and writes a story titled "Life on a Spanish Ranchero One Hundred Fifty Years Ago."

When studying Japanese courts in A.D. 607, Jesse becomes interested in the architecture used in the homes during the time. He learns why Shojii screens were used and how the materials for construction depended on geographic location. Jesse's woodshop teacher helps him locate plans for constructing Shojii screens, and he makes them for his shop project. Mario and Tatyana ask to borrow the screens to use in their history–social science project, and the screens become a stage background when they read a Japanese folktale and show slides from "Japanese Castle Towns" from the SPICE unit on ancient Japan.

The history–social science program cultivates civic virtue and responsibility in students.

- **Students develop basic precepts of good character and democratic values, drawing examples from history, literature, and the world in which they live.**

After having *Little Red Hen* read to them, kindergarten children react as to whether the hen should have shared, stating reasons to support their stands. They talk about the other animals and their reactions and what might have happened had they helped. Lacey, Holly, Jamie, and Melissa make puppets and dramatize the story. Isaac, Sam, Linnette, and Belle use their puppets to retell the story with a different ending. The puppets are left in the drama center for children to use during other times.

Students need to hear and discuss stories that raise value issues and point up the consequences of behavior. During the first grade, students are engaged in simplified Socratic seminars when studying fables and morality tales from world cultures, including such stories as Ann Grifalconi's *Osa's Pride*, the Jataka tales, and Aesop's fables. Lucinda, Kandra, Tommy, Nate, Michelle, Ritsuko, and Kim meet with the teacher while their classmates meet with other adult group leaders. In responding to a question posed by the teacher after learning "The Milkmaid and Her Pail," Kandra says that the milkmaid had an accident and it wasn't her fault. Nate responds that she could have watched out. The discussion continues until by a process of questioning, students are led to comment on the importance of "thinking ahead" and to apply the story to situations than can arise at school.

Voters in a democratic society have the responsibility of staying informed and giving careful attention to issues and policies of campaigners. At Copa de Oro Elementary School, students in the third and fourth grades vote for student council representatives. They listen to campaign speeches, preparing for a follow-up discussion in which they will identify the ideas of each candidate and state opinions regarding the impact the ideas would have on their school. Students apply note-taking skills while listening. On election day students step into voting booths to cast their votes, and their names are marked on the registration list. Students who have voted are given a "Remember to Vote!" badge to wear throughout the day. Because this is a yearly tradition at Copa de Oro and tends to be taken for granted, class officers or teachers lead discussions of why it is important to vote and how this prepares students for adult life. Discussion leaders bring clippings from local newspapers that identify contemporary issues that community voters will be deciding by ballot in approaching elections.

After studying about such people as Washington, Lincoln, Martin Luther King, Jr., Mary McLeod Bethune, and Chief Seattle, fifth grade children relate how truth and honesty are evident in the lives of these people. Francesca and Vladimir share their quick write in their reflective journals about what they think children today need to know about truth and honesty, and how honesty is essential for society as a whole.

After studying passages from the *Analects of Confucius* and becoming familiar with Confucian ideas of family and government, students meet in discussion groups to apply what they have learned to hypothetical situations. Lana, Vernon, Toby, Shareeta, and Neville discuss and report to the class on the following topic: "The government is responsible for protecting the lives and property of citizens. Suppose a neighbor calls the police to report neighborhood children throwing rocks at nearby houses. The police investigate and apprehend the offenders. What would Confucius believe about the children, their families, and the government's intervention?" In the discussion and the report, students support their ideas with one or more of Confucius's teachings.

Near the conclusion of the eighth grade, students write a reflective essay in response to the questions: "How do you think this current period of history will be regarded? What will be praised and condemned? Who will be the heroes and heroines, and what did they do?" Students develop a rubric by which essays are selected for publication in the school's newspaper.

- **Students examine important documents, speeches, autobiographies, art prints, songs, and similar primary source materials to understand and appreciate the democratic heritage and ideals that bind us as a nation.**

Artworks from the past often capture the daily lives of ordinary people and provide students with valuable primary source material. As they study the interdependence of people long ago in the unit "People Who Supply Our Needs," second graders make connections with similar interdependence today. The class examines various Currier and Ives prints. Marci, viewing *Trotting Cracks—the Forge*, points out that just as people depended on the blacksmith to fix horses' shoes, today we depend on mechanics to fix cars and tires. Allen contrasts fire technology then and now when viewing *The Life of a Fireman*. *Trolling for Blue Fish*, *Wayside Inn Whale Fishery*, *National Game of Baseball*, *Life of a Hunter*, and *Market Preparation* are studied by other students for similar observations and comparisons.

Students learn that a primary source can require them to draw conclusions, ask questions, and make conjectures. Fourth graders Jason and Diana examine a facsimile copy of California's first Constitution. They notice that the document is handwritten in both English and Spanish. They conjecture reasons for this and answer "guided study questions" assigned to them: "What is the purpose of this Constitution? What changes did this Constitution bring about in the lives of Californians?" Jason and Diana use reference materials in formulating their ideas. (The source for the facsimile is given on pages 40 and 126 of *Literature for History–Social Science, Kindergarten Through Grade Eight*.)

The impact of ancient and later world history on the development of the United States is considerable. As sixth graders, students had examined such concepts as "consent of the governed" and "rule of law" and ideas from Biblical covenants and Aristotle. Now, as seventh graders, students learn key ideas from the Enlightenment. Kevin, Elisha, Anna, and Juan read a brief passage from Montesquieu's *The Spirit of the Laws* to understand the idea of "separation of powers." As a follow-up to the reading, they examine diagrams of four types of government criticized by Montesquieu and develop explanations as to why these types are not effective in protecting liberty. Students then develop a diagram of what they think would be a model government and explain why such a model would protect liberty. This strategy, along with other activities relating to Locke, Jefferson, and Chief Logan, is contained in the resource *Slices of Time*.

Students in an eighth grade history class study Lincoln's Emancipation Proclamation. Students work in five different groups to determine the reactions of these states: Massachusetts, South Carolina, Texas, California, and Missouri. They examine editorials and articles from the time, viewing excerpts from the PBS series "The Civil War," and referring to such collections as *The American Reader*, *Voices from the Civil War*, and

Black Americans, A History in Their Own Words. Representatives are chosen from each group to read the papers aloud to the class. The teacher, monitoring the reports, guides and checks for historical accuracy and support for assertions.

- **Students participate in individual, school, and/or community service projects, utilizing community resources as appropriate.**

Second and third grade classes participate in a schoolwide aluminum can recycling project. They view excerpts from the Nova series "The Race to Save the Planet." One year the money collected is used to purchase an acre of rain forest; another year the students adopt a whale. The fourth graders collect receipts from grocery supermarkets, turning them in to help purchase books, technology equipment, and playground apparatus.

For one hour each week, Jason and Juan, both sixth graders, walk to a neighboring elementary school to work with kindergarten students in science. The kindergartners are studying about how their community is made of different living and nonliving things and are making a large illustration of living and nonliving things in their community. Jason and Juan help them think about what will go into each category and what materials they will need for the poster.

School "buddy" systems foster cross-age tutoring skills as well as kindness and thoughtfulness. Sixth grade buddies visit a first grade classroom every week during the year to do special activities together. Mary reads "Androcles and the Lion" to Marcia, and they talk about what it means to be a friend. She asks Marcia questions about what she has done to be a friend. At the end of the year when kindergartners visit first grade, Marcia shares with her classmates what she has learned or gained by giving special attention to Serena, her buddy in the kindergarten. Mary shares with her classmates what she gained from being a buddy to Marcia.

Eighth graders Brenda and Tamika volunteer eight hours each week to work at a local hospital, and they keep a journal of their experiences. They report their experiences to the class on a regular basis. As a result of these experiences, Brenda decides she might like to pursue a career in health service, such as medicine or nutrition.

The history–social science program fosters student interest and understanding and makes the content accessible to all students.

- **Students study literature and primary sources that deepen and enrich history–social science learnings.**

While studying prerevolutionary America, a fifth grade class reads books about the period such as *Johnny Tremain* by Esther Forbes and *And Then What Happened, Paul Revere* by Jean Fritz in order to relate to the feelings of the people of the time. Students focus on the Boston Tea Party. Using the Scholastic Program "76 Revolution," the students prepare a tableau based on their favorite scene from the book. When the teacher taps the students on the shoulder, they say what they're doing, how they felt, and where they are. For example, Tao becomes Johnny when he injures his arm, and Kevin becomes Paul when he is at work as a silversmith.

After studying Henry Smith's account of Chief Seattle's speech contained in *The American Reader, Words That Moved a Nation,* eighth graders work in groups to select six passages from the speech that will serve as a narrative for a picture book. Illustrations are drawn by students, and the narrative is written in calligraphy and displayed on cards that accompany each picture. These are displayed by each group and shared with fifth grade classes that also study the removal of Native Americans from their land. The strategies of collaboration and pictorial representation are helpful to students with limited English proficiency.

- **Students connect history–social science with other learnings.**

After studying about the people who supply our food, each second grader makes a list identifying the foods he or she eats for breakfast, lunch, and dinner. Students categorize the food items on charts as meat, fruits, vegetables, and the like. Students then compare the foods on the charts for similarities and differences. Ritsuko reports that rice rather than bread is part of her meals and demonstrates how to hold chopsticks, Alfredo explains how tortillas are eaten with meals, and Gina tells how she helps her grandmother make pasta. As a next step, the students identify the related geographic locations on a world map. This is an "into" activity to the unit "People Who Supply Our Needs."

Fourth grade students are studying the changes that occurred in California after 1850 as a result of linkages brought about by the Pony Express, overland mail service, telegraph service, and the transcontinental railroad. Visual and performing arts skills are used as students analyze the before-and-after comparisons of issues or events. For example, students illustrate a sequence of events in drawings or cartoons, construct a pictorial timeline that depicts in chronological order the changes that occurred in California as a result of the railroad, or develop a skit portraying the period in California history before the Pony Express was begun and the period after it.

In their study of early American history, a fifth grade class agrees that whales were one of the strange animals explorers were likely to encounter. The class decides to research information about whales. Carole wants to find out why whales were hunted; Paul wants to know about the current controversy regarding whaling today; Joya wants to investigate how many kinds of whales there are. To correlate meaning among many subject areas, students listen to recordings of whales (music). They learn the history and function of chanteys and make up new words for traditional chanteys. They create murals showing different species of whales, noting their various sizes and shapes (art and science). They study murals painted by artists past and present to understand various uses and purposes of murals, and they learn about color, value, and shading. Students compare the proportions of each species, make a map charting the voyages of a whaling ship, identify factors that may influence the distance and time travelled, and calculate the time and distance for a voyage with and without obstacles, thus combining math, science, and geography skills.

During free reading time in their eighth grade core language arts and U.S. history class, several students are reading the novel *My Name Is Not Angelica* by Scott O'Dell. In class the next day, Alicia retells a portion of the story in English with a storyboard she has created. Maria chooses to retell the same portion, but in Spanish. Sabu, who has been in California longer than the others, performs a monologue in English, portraying a character in the book.

- **Students have opportunities to connect history to personal experience.**

Fourth graders study the daily lives of people in early California, which leads to a discussion of goods that arrived on clipper ships to be traded for California hides and tallow. This leads to connecting the concept of trade with other countries to products their families buy. For homework, Jackson's group investigates clothing labels to identify fabric content, the country in which the fabric originated, and where articles of clothing were made. In their presentation to the class, they explain their findings by showing the clothing labels, a map indicating origins of the fabric, and where the clothing is manufactured. Jackson concludes the presentation by contrasting this interdependence with that known by those coming to California.

To better understand the development of human societies and how people of a society work together, establish rules, and develop social and economic systems, the sixth grade class divides into heterogeneous groups of three or four. Eduardo, Belle, and Susie form a group to discuss and identify the needs of their society and how meeting these needs may affect the ecology and natural resources of their region. Other groups work on such projects as developing a legal system or devising a strategy to attract tourists to geographic points of interest in their region. The groups share their ideas with the whole class. This prepares students for discerning some of the factors every society has had to take into account. The activity is used as a point of reference when students study early civilizations during the school year.

In the eighth grade unit "Linking Past to Present," Katrina is making a comparative analysis of women who migrated during the colonization periods of U.S. history. She is particularly interested in women of different ethnicities during these periods as well as changes in their social and economic status and implications for the women in her family's culture.

- **Students experience strategies involving different learning styles.**

Mr. Niravanh works with several third grade educationally disadvantaged children. He recognizes that multisensory activities that take full advantage of students' personal resources can improve their retention of important historical issues and events. As with most, these students remember information most efficiently when they are actively involved in seeing, saying, and doing. In their study of American Indians who lived in the region, Mr. Niravanh invited an American Indian storyteller to class to share authentic information about tribal identity, social organization, arts, folklore, and customs. The students question the storyteller about the location and composition of villages; structures that were built and materials used to build them; relationship of structures to the climate; methods used to obtain and prepare food; materials used for clothing, tools, and utensils; and the trade that occurred with other Indians. This prepares students for a visit to a local museum featuring California Indian cultures.

After reading *Cassie's Journey* by Brett Harvey, fourth and fifth graders investigate and research the westward movement of families during the 1840s. The students make a list of historic findings. Using their discoveries, students write their own picture books, weaving historic facts into them. The picture books include a cover, maps of the journey westward, tracings, drawings, and a story of the student's journey.

In her fifth grade study of the Appalachian West, Michelle creates a story based on a favorite heroine of this time period. She acts out her story for her classmates. Maurice chooses to draw pictures illustrating the period, while Dusty tapes a song he created about this era.

Seventh graders learn about medieval Japan by using print and nonprint materials in independent projects. David is fascinated with the medieval castles in the mountainous island nation of Japan. He learns most of his geography through the study of castles, plotting routes to castles and identifying the reasons for their location. Rachel learns about the Japanese culture from listening to audiotapes of the creation stories of Izanami and Izanagi. The teacher shows the video series "Japan" to provide visual images of the people and the land. Boris wants to compare his findings of the castles in medieval Europe to David's findings by preparing a slide presentation.

Seventh graders Phong, Thao, and Ngat are all recent arrivals from Vietnam. They have been placed in an ESL program with a history component. In order to make the content comprehensible and accessible, bilingual aides work closely with the students. They prepare an informational/education pamphlet on the Inca Empire. The pamphlet includes information on geography, climate, economics, and political institutions. Phong, Thao, and Ngat prepare pictures, assisted by peers and the aide. The narrative is written by them in their native language and by other students with greater English proficiency.

- **Students use a variety of technologies to make content accessible and meaningful.**

A fourth and fifth grade class uses the simulation game "Golden Spike" about the building of the transcontinental railroad from the builder's point of view. To store their information they use a data base.

Piotr and Vladimir, recent seventh grade immigrants from Russia, play the computer game "Where in the World Is Carmen San Diego?" Using an English-Russian dictionary, an atlas, an almanac, peer guidance, and an electronic encyclopedia, they catch the villain and solve the crime.

Using the computer cooperatively, eighth grade students create and design their own hypercard stacks about a historical topic. Jason and Javier creatively interface music, buffalo sounds, drawings, graphics, and written text about the Oregon Trail. Using print materials, including Francis Parkman's *The Oregon Trail* and Leonard Everett Fisher's photography book of the same name, they design and draw maps of their journey, and write text about the westward movement. The hypercard stacks are shared with the entire class after the unit is finished.

The history–social science program includes an assessment component that encompasses the full range of history–social science goals and incorporates performance-based approaches to assessment.

- **Samples of students' work are collected in portfolios.**

Third grade students and their teacher review the purpose of the portfolio and agree on the types of information to be placed in the portfolios. Mr. Pham checks Mei-mei's and Choy's folders for the checklist, indicating their social participation skills; samples of writing assignments related to their understanding of the natural features of a region, including book reviews of people who settled in the area; comparison of two maps for the same region describing influence on employment opportunities; and pictures of Mei-mei's and Choy's participation in the group project to produce a relief model of the region.

- **Students, peers, and teachers actively participate in evaluating their oral and written work and projects.**

In preparation for presenting oral reports, the seventh grade class identified the components of a good report (focus, impact, relevancy) and the criteria for evaluating reports. Lisa, Ralph, John, and Shigeko formed a committee to prepare an evaluation form for students and the teacher, which includes a check-off list and comments section. Cathy and Christopher agreed to prepare the outline for the report on how early inventions in China influenced current technology to present to the class. Their classmates and the teacher will critique the presentation according to the criteria on the evaluation form. Results of the evaluations will be shared with the presenters.

- **Both formal and informal observations of students, their work, and classroom interactions are used frequently in the overall evaluation of student progress.**

Throughout the first few weeks of school, the teacher has informally observed his fourth graders at work on independent and collaborative assignments. He has noticed that Lana and Lisette are quiet students and tend to be less verbal or participatory in collaborative projects. By reviewing the written work of these students, and through conversations with them, he determines important factors in making evaluations. Lana, who lives on an American Indian reservation, is attentive and diligent, and her placidity is a cultural consideration, not the result of a lack of ability or application. Lisette is by nature shy, yet her written work and regular completion of assignments show her to be a serious student. As the students begin the study of the American Indians of California, the teacher plans a variety of strategies and activities to address different learning styles. The progress both girls show in nonoral or noncollaborative assignments helps the teacher make a fair and thoughtful evaluation.

- **Students of diverse language and cultural backgrounds are able to demonstrate their knowledge through a variety of assessment strategies.**

Arturo's parents are looking at his portfolio during open house. They see: (1) the teacher's checklist of second grade skills mastered by Arturo with comments on skill areas yet to be addressed; (2) a report which includes a taped interview by Arturo asking his parents and grandparents when, how, and why they came to America, a picture of Arturo's family tree, and a map showing the various places the family has lived; (3) another tape of Arturo explaining how he felt about his traditions and culture compared to those of his classmates; (4) comments written by his classmates on an oral book report he presented; and (5) a simple journal explaining what Arturo admired most about the main character of the book he had read.

- **Assessment gives students an opportunity to apply what they know.**

During the study of the American Revolution, fifth grade students choose a historical character. Working in pairs, students research their character, write an introduction about his or her accomplishments, and perform "a moment in time" of the character. Oral presentations are evaluated by classmates, using a rubric developed by the teacher and students. Evaluation sheets are recorded in the student's portfolio.

Professional Practices

Teachers and administrators have a professional responsibility to learn about the field of history–social science and can do this best by committing time to:

- Attend subject-matter project institutes and follow-up activities, particularly:
  - California History–Social Science Project
  - California International Studies Project
  - California Arts Project
  - California Literature Project
  - California Writing Project
  - California Language Minority Project
- Participate in other types of professional development activities, such as those provided by:
  - California Geographic Alliances
  - Centers for Economic Education
  - California Council for the Social Studies and affiliated local councils
- Maintain ongoing awareness of available curriculum resources supporting the framework, such as those provided by the California Department of Education, institutes, and publishers.
- Form collegial reading circles to study:
  - Curriculum documents published by the California Department of Education
  - Professional journals
  - Current research and literature pertinent to grade levels taught
  - Books on California, United States, and world history
- Meet on local or regional basis with teachers from other schools to discuss student work.

- Establish local or regional networks with teachers to gain information on:
    - Student work
    - Curriculum
    - Instructional practices
    - New developments in assessment
- Attend conferences and workshops sponsored by district and county offices and professional organizations.
- Work with mentor teachers and district/county history–social science specialists in peer coaching situations.
- Establish links between themselves and teachers and faculty in institutes of higher education, resulting in a regular exchange of current research, practices, and district-level needs.
- Enroll in relevant college courses to expand or refresh knowledge of history–social science content.

Improvement in the school's history–social science program depends on a commitment of time and resources by teachers and the administration. They:

- Allocate funds for professional development in history–social science.
- Allocate funds for the purchase of instructional and library media resources.
- Provide time and support for teacher planning and professional development.

The history–social science program is sequential in nature; teachers need to work collaboratively to coordinate program content within and across grades. This requires significant time on the part of teachers to:

- Work with others at their grade level to coordinate shared activities and resources.
- Work across grades to:
    - Refine scope and sequence.
    - Eliminate unnecessary overlap or duplications.
    - Develop knowledge and skills described in the framework's goals and strands.

- Work with others across subject areas to develop correlated curriculum that strengthens their history–social science program.
- Plan to ensure that prior learnings are connected to the content being taught currently.
- Determine major topics within units, amounts of instructional time, and strategies best suited to the content.

Teachers use multiple resources and a broad array of instructional strategies in addition to history–social science textbooks. As professionals, they:

- Investigate, study, and incorporate a wide variety of literature and primary sources into the history–social science program.
- Collaborate with school, district, and public library personnel to plan how to incorporate available resources into instruction.
- Involve students actively in the learning through content-appropriate strategies which may include:
    - Reading (or being read to) picture books and literature appropriate to the topic (fiction, nonfiction, biographies)
    - Reenactments, tableaus, and simulations
    - Preparing newspapers and newscasts from the past
    - Performing skits, songs, reader's theater
    - Role-playing and dramatizations
    - Direct instruction strategies that provide for reading, writing, listening, and speaking
    - Initiation of note-taking and outlining
    - Varied writing activities, including logs, diaries, and journals
    - Varied types of technology
    - Dance, drama, music, visual arts, and media arts activities
    - School and community service
    - Local and oral history projects
    - Collaborative learning
    - Whole-group and independent projects, research, and assignments
    - Use of community resources
    - Mapping activities

- Encourage students to become historians by:
    - In grades 3–6, using sources for research, such as libraries, newspaper offices, museums, and historical societies
    - Investigating current events and issues
    - Interviewing local historical figures and those with potential impact or influence
    - Keeping logs and journals
- Involve students in field trips that help extend their understanding of the history and geography being studied, such as:
    - Historic sites and museums
    - Community or urban landscapes and ethnic enclaves
    - Physical geography excursions
    - Neighborhood walks
- Correlate history–social science content with the content in other disciplines.

The school staff educates parents and the community about the history–social science program. They:

- Conduct parent workshops to help parents understand the major concepts and purposes of this history–social science program and their roles in the process.
- Describe program content at Open House and Back to School Night and in school accountability report cards.
- Familiarize parents with the California Department of Education's publication *The Changing History–Social Science Curriculum: A Booklet for Parents* (available in English and in Spanish). Pages 13–14 contain information on how parents can help students at home.
- Describe in newsletters to homes the progress in improving the school's history–social science program, including a briefing on any noninstructional days devoted to program improvement.
- Invite parents to program events, such as a History Day or Evening, Parent Exchange Day, assemblies, and other appropriate events.

Teachers use community resources to implement a strong history–science program. For example, they:

- Arrange presentations, performances, demonstrations, and dramatic enactments by local parents, community members who have been a part of historical events, historians, officials, performers from the multicultural community, storytellers, and docents.
- Collaborate with community members in planning and supervising school and community service activities, as appropriate to the age, such as:
    - School "buddies"
    - Beautification drives
    - Senior citizen services
    - Recycling
    - Community recreational assistance
    - Cross-age tutoring
    - Assistance programs for new immigrants
    - Read-aloud programs at libraries
- Encourage student attendance and participation at council meetings, board meetings, and local government functions.
- Encourage students to develop the habit of reading newspapers.
- Involve community members to assist in providing resources for developing curriculum.

Teachers, students, and peers actively participate in performance-based assessment that encompasses the full range of student and program goals for the history–science program. To do this, teachers and administrators:

- Become familiar with holistic scoring scales through attendance at various conferences and workshops.
- Educate parents about new types of assessment.
- Collaboratively develop grade-level assessment standards and curriculum-embedded performance tasks.
- Establish criteria for collecting portfolios of history–social science work, including nonwritten work.

- Train students on the principles of self- and peer assessment.
- Use assessment to adjust strategies and programs to best serve students.

History–Social Science Resources

The following publications are available from the Bureau of Publications, Sales Unit, California Department of Education, P.O. Box 271, Sacramento, CA 95812-0271; phone: (916) 445-1260.

History–Social Science Framework for California Public Schools, Kindergarten Through Grade Twelve (1988)

Adoption Recommendations of the Curriculum Development and Supplemental Materials Commission to the State Board of Education, 1990: *California Basic Instructional Materials in History–Social Science* (1990)

The Blessings of Liberty: Constitutional Teachers' Institute, Final Report (1987)

The Changing History–Social Science Curriculum: A Booklet for Parents (1990); Spanish version (1993)

Course Models for the History–Social Science Framework, Grade 5—United States History and Geography: Making a New Nation (1991)

Course Models for the History–Social Science Framework, Grade 6—World History and Geography: Ancient Civilizations (1993)

Literature for History–Social Science, Kindergarten Through Grade Eight (1991)

Model Curriculum for Human Rights and Genocide (1988)

Moral and Civic Education and Teaching About Religion (1991)

Readings for Teachers of United States History and Government (1990)

Readings for the Christopher Columbus Quincentenary, Kindergarten Through Grade Twelve: An Annotated List (1992)

Technology in the Curriculum Resource Materials: Full Package (1988)

Technology in the Curriculum Update Guides (1987)

With History–Social Science for All: Access for Every Student (1992)

The following publication, issued jointly by the California County/State Steering Committee and the California Department of Education, is available from the Office of the Kern County Superintendent of Schools, 5801 Sundale Avenue, Bakersfield, CA 93309-2900, Attention: Gina Davis.

History–Social Science Model Curriculum Guide, Kindergarten Through Grade Eight

The following organizations are sources for additional information:

Academic Model Technology Project, Project HAT, Peg Bettcher, Director, Carnegie Middle School, 5820 Illinois Avenue, Orangevale, CA 95662; (916) 962-2616.

California Council for the Social Studies, 1255 Vista Grande, Millbrae, CA 94032.

California History–Social Science Project, Ed Berenson and Amanda Podany, Executive Codirectors, CAIP, University of California, Gayley Center, Suite 304, 405 Hilgard Avenue, Los Angeles, CA 90024-1372, (213) 825-7053.

California International Studies Project, Ron Herring, Executive Director, School of Education, CERAS, Room 125, Stanford University, Stanford, CA 94305-3084.

Center for Civic Education, 5146 Douglas Fir Road, Calabasas, CA 91302.

Centers for Economic Education, which are located on most campuses of The California State University. Contact the Economics Department.

Citizenship and Law-Related Education Center, 9738 Lincoln Village Drive, Sacramento, CA 95827.

Constitutional Rights Foundation, 601 S. Kingsley Drive, Los Angeles, CA 90005.

National Center for History in the Schools, Charlotte Crabtee and Gary Nash, Codirectors, Graduate School of Education, UCLA, 405 Hilgard Avenue, Los Angeles, CA 90024.

Northern California Geographic Alliance, Jerry Williams, Alliance Director, Department of Geography, California State University, First and Normal Streets, Chico, CA 92929-0780.

Southern California Geographic Alliance, Gail Hobbs, Alliance Director, Department of Geography, Pierce College, 6201 Winnetka Avenue, Woodland Hills, CA 91371.

Language Arts Criterion

Focus Statement

A strong language arts program meets the needs of *all* students by providing a rich variety of activities and learning resources that enable them to make sense of and find meaning for their lives through literature. Students gain a solid body of knowledge derived from a common cultural heritage that reflects the contributions of the diverse ethnic groups in the United States. They are provided experiences in confronting important human issues as well as with personal, ethical, social, and aesthetic values. In all subject areas, students effectively develop and use the language skills of listening, speaking, reading, and writing in English and, if different, their primary languages.

Regardless of the language of instruction, an effective language arts program is based on (1) the study of significant literary works; (2) instruction that builds on students' interests, skills, prior knowledge, and experiences; (3) the integration of the processes of listening, speaking, reading, and writing; and (4) the effective use of these four processes to promote learning in all subject areas. Teachers recognize that meaning is constructed by the learner, drawing on personal experiences through interaction with the text so that meaning for each reader is always unique. Learners share interpretations and arrive at an increasingly complex understanding of the possible meanings of a given text. Through the language arts processes in all subject areas, students develop, elaborate, and clarify insights and recognize the importance and use of language in all areas of learning.

Student Work

The language arts program is literature-based and meaning-centered and exposes all students to significant literary works.

- **As part of making meaning, all students draw on prior experiences to make predictions, ask their own questions, and initiate discussions about their interpretations of the text.**

  Third grader Maria reads a story in which the lead character catches a ball. Although the word *baseball* is not mentioned, Maria's experience as a shortstop helps her to predict and conclude that baseball indeed is being played. Paired with My, another fourth grader but one lacking experience with baseball, Maria shares her interpretation of the text, thus helping My to make meaning from the written words.

The teacher reads aloud to sixth graders several folktales from *The Cow-Tail Switch and Other West African Stories,* modeling how to stop at strategic points to predict what will happen next or ponder the sense of the story. The sixth graders then independently read a selection of folktales, writing their own questions and placing them on stick-on notes at the points where they would make predictions or ask questions, based on their individual knowledge. A partner then reads the story, posing the questions at the appropriate time.

- **Students read or listen to self-selected works, including student-authored text and works which are representative of a variety of genres.**

Tinh's second grade class begins every day with 15 minutes of silent sustained reading. Students read in their primary languages. Individual students make selections from a variety of sources, including the classroom library, the school library, the home library, or student-authored works. Students keep records of the titles that are selected.

Lynn and the other students in her third grade classroom receive a BINGO card, which labels each space with a different type of literature, including poetry, biography, historical fiction, mystery, fiction, and nonfiction. Students read works on their own or listen to works read by others, some of which are on audiotape, then color in a space for each corresponding type of literature. When a horizontal, vertical, or diagonal line has been filled in, they receive a bookmark. Blackouts are rewarded with a selection from a collection of paperback books.

To qualify for Paddington's Book Club, students in grades five and six read 15 books in 12 different categories, which include a variety of genres, and report on them orally. They receive a free book and button for their membership.

An eighth grade language arts class creates a large chronological mural on Mexican-American literature. Small groups of students select different historical periods and different genres, read relevant works, and use a word processor to write and edit a parallel work of their own in the genre they have chosen. Works are selected by student/teacher editorial groups for publishing as a book. Bilingual students write for the book in two languages. Both the book and the large chronological mural are displayed in the library.

During his first week in a classroom in America, eighth grade student Sang Kim reads a spy novel in Korean during the school's daily 15-minute period for silent sustained reading.

- **Students respond to literature representative of a variety of genres and cultural perspectives.**

The third grade teacher and the library media teacher plan a unit on cultural backgrounds. Children read Leo Politi's *Three Stalks of Corn* and Barbara Cohen's *Molly's Pilgrim* as a class project. After discussion of each story, each child is assigned to determine from what country his or her ancestors came and to design a doll or draw a picture of the immigrants who came to this country, including appropriate clothing. The designs and pictures are displayed in the school library.

After reading a traditional version of *Cinderella,* a fifth grade class sets out to discover similarities and differences in "Cinderella" stories from a variety of cultures, including *Yeh Shen: A Cinderella Story from China.* The class creates a "Cinderella Through History" time line.

Seventh grade students read Helen Keller's *The Story of My Life,* then William Gibson's play *The Miracle Worker.* Focusing on the portrayal of Helen Keller in these two works, students develop a profile of Helen Keller, then write biographies of this accomplished woman.

- **Students confront personal, moral, and ethical issues and values presented in literature.**

After listening to a reading of *Little Red Hen,* first grade children break into small groups to discuss whether the main character should have shared her bread with the other characters. After their discussion, the teacher reads a variation in which the little red hen does share with her friends. The children discuss the two stories and the importance of sharing and record their feelings about the different versions on a wall chart.

After reading a classic version of *The Three Little Pigs,* fourth grade students hear *The True Story of the Three Little Pigs* by A. Wolf. They discuss how the characters view the situation differently and how the characters' perceptions change the story. The children then work in cooperative groups to develop narrative versions of *Little Red Riding Hood from* the perspective of the wolf in that story.

Eighth grade students reading Mildred Taylor's *Roll of Thunder, Hear My Cry* write in interior monologue form as characters in the book. One group of students assumes the roles of the characters. Other students ask them questions about their actions and their beliefs. An intensive discussion of the idea of separate but equal follows. Current situations in the world are compared through the use of news broadcasts and student magazines. Students write essays on the topic "I believe (do not believe) that it is possible to live separately and equally."

After reading Daniel Kayes's *Flowers for Algernon*, eighth grade students interview the teacher and students in a class for students with special needs. Afterward, the students reflect on their change in attitude about students with special needs; students write their thoughts in their writing journals.

- **Students help select core, extended, and recreational reading materials.**

Third grade students regularly view the ITV series "Sixteen Tales" to discover new books of personal interest. Following each broadcast, they make a trip to the library to select new books for their personal reading.

Sixth grade students maintain a data base of book reviews of extended works and works of their own choice. Reviews are modeled after professional reviews found in newspapers and literary magazines, such as *Horn Book. The* data base is stored in a computer that allows students to search easily through the reviews. This information is used by students in other grade levels as they develop a list of potential recreational works for the school.

After three years of implementation of a core book list, teachers at the middle school ask students to evaluate the books they had read and make new recommendations for the core list, including selections in the students' primary languages. Students and teachers develop criteria for assessing core works, and a schoolwide survey is conducted. Results and recommendations are presented to the school site council.

The instructional program emphasizes the *integration* of listening, speaking, reading, and writing. Integration is essential in any language.

- **Students share written, dramatic, or graphic responses to the literature they have read or heard. This integration helps students construct personal meaning.**

Using the picture book *The Snowy Day* by Ezra Jack Keats, kindergarten students working in cooperative groups, organized by language dominance, develop text for each page based on their understanding of the story. The group then dictates their text to a fifth grader, who types it into the computer and makes it into a book for the classroom library. This will add to the classroom library of bilingual books.

Students in grade three read a selection of folktales, then are divided into groups to write scripts, make original puppets, and present a puppet show to the class. Their scripts for the show may be representative of one of the folktales read or may be original, incorporating important aspects of folktales the students have been studying.

Fourth and fifth grade students read illustrated stories from the school library and create book talks modeled after the ITV series "Reading Rainbow." Students view several segments of the series, write a plan for the book talk, and practice in small groups. The book talks are broadcast live (or presented on audiotape) to primary classrooms and include an invitation to visit the library to check out the book.

After reading *The Legend of Food Mountain (La Montana del Alimento)* and *Beyond the East Wind: Legends and Folktales of Vietnam*, sixth grade students analyze the elements of a legend. Based on their understanding, groups of students brainstorm ideas for topics and write books of legends as a classroom project. The legends include samples from local ethnic groups. The book is then placed in the classroom library.

- **Students listen and respond daily to a variety of works.**

During daily journal writing, second grade students spend the first five minutes of the session writing or drawing their responses to the story read aloud that day. Volunteers then share their responses with the group.

After listening to an oral reading of the first chapter of *Sarah, Plain and Tall*, fourth grade students discuss the chapter first as a group and then in pairs, focusing on Caleb's and Anna's feelings when they learn their father received a reply to his newspaper advertisement for a wife. Pretending to be either Caleb or Anna, students write letters to their fathers about their responses.

- **Students read, publish, and display both individual and class projects.**

A special section in the school library contains books published by students. Available for library use only, the books remain favorites among students visiting before, during, and after school. These books are featured during the annual Back-to-School Night.

After reading a self-selected book, third grade students use a computer to compose a story patterned after the style of the book. The story is then printed from the computer and illustrated by students. A cover is designed. It then becomes available for check-out by students for classroom or home use.

Using a variety of sources, a fourth grade bilingual class researches the period of California history in which the missions were built. Students then collaborate to produce an *ABC of Missions* book. Each page explains an article or item used during the time. Some pages are written in the students' primary languages. Students use the computer to write their explanations, illustrate their pages, and publish the book as a reference for future fourth graders.

Sixth grade students use a computer data base and view films to develop travel brochures for countries they are studying. The format is determined by classroom discussion regarding the information which could be included in such a brochure. Students then research, write, and illustrate their own brochures. Then they develop itineraries for trips through their countries. They keep diaries or travel journals which include preparations for the trips, travel notes, and personal responses to the sights they visit.

The program includes reading to construct and clarify meaning and directs attention to the various stages of the reading process. Reading is perceived as part of the process of acquiring and developing language.

- **Students of all ages exhibit the behavior of readers, including those who are developing their English proficiency.**

During free-choice time, a group of kindergarten children is playing in the "imagination area," which this week is designed as a mechanic's garage. Johnny "reads" a magazine left in the waiting area while other students fix his car. He then "reads" the bill and "writes" a check to pay for the services.

Lisa "reads" her favorite book, *Green Eggs and Ham,* to another kindergarten classmate. Later, both children are seen giggling over *May I Bring a Friend?* One child "reads" the pictures, and both chime in on the repeated refrain "May I bring a friend?"

Seventh grade students, working in groups of five, are assigned to read the first part of *Diary of Ann Frank,* discussing how it might feel to be confined in such a small space for a long period of time and preparing a group graphic depicting their feelings about such a confinement. Alicia's group, whose members are developing their English proficiency, refers to her copy of *Diario de Ana Frank* to assist in their comprehension of the English version of the text and to participate fully in the group's discussions and preparation of the graphic.

- **Beginning readers learn letter/sound correspondence through their interactions with predictable/repetitive texts and while writing words during drafting.**

After first reading *Momo's Kitten* to her kindergarten class for pleasure, the teacher picks out three words pertinent to the story: kitten, girl, and Momo. Students match the beginning sound of each word with words from their own vocabularies.

While working on the poem "Over in the Meadow," first-grade students are exposed to the text written on sentence strips and placed in a pocket chart. Several words are masked by using stick-on notes to cover the letters. The teacher reads the poem aloud with the students, tracking the words and stopping at the masked words for students to predict. Beginning letters are uncovered to determine whether the students' predictions could be correct. Then the entire word is exposed as they continue reading the poem.

- **Beginning readers learn word order as they interact with the text in their search for meaning and through their writing of stories.**

After hearing the story *Caps for Sale,* by Esphyr Slobodkina, read to her by a cross-age tutor, first grader Chiyoko constructs meaningful sentences from individual words taken from the story and written on cards.

After listening to a recording of *The Little Red Hen* and talking about the events in the story, first graders compose short sentences expressing their feelings about Little Red Hen and her "friends."

- **Students synthesize personal experiences with the situation presented in the text, thereby comprehending and making meaning for themselves.**

First grade students listen to the teacher read the story *Benjie on His Own*. Andrew then states, "That's just how I felt when I tried to help someone who was in trouble." Other students then respond with personal situations in which they gave help to someone in need.

While fifth grade students follow along in individual texts, the teacher reads the initial chapter of the core text *Midnight Fox*. When asked to consider whether they have ever been made to do something they did not want to do, students, working in cooperative groups, share circumstances and feelings similar to those of Tom, the main character in the book. Later, in a whole-class discussion, children predict whether Tom would have had a positive or negative experience at the farm in the story. Predictions are accompanied by parallel experiences from their own lives.

Seventh graders in a sheltered language arts class use the same core text, *Ishi, Last of His Tribe* (Theodora Kroeber), required for all students at the school. Through a variety of teacher strategies, including storytelling, illustrations, paired readings, and response journals, students comprehend and make meaning from the text. Vocabulary is acquired through the development of meaning in context.

Eighth grade students, reading *Roll of Thunder, Hear My Cry*, explore the Emancipation Proclamation and view segments from GTV, a multimedia American history and geography computer and video program, about the Civil War and Reconstruction as background material for the novel. Students make personal connections about the true implications of a civil war from information about the divisions among neighboring communities found in the book. In small-group discussions, they identify how they would be affected in such a situation and how current civil wars in other countries led newly arrived students to the United States from Vietnam, Laos, Cambodia, and El Salvador. Limited-English-proficient students do this activity in their primary languages.

After eighth grade students finish the core work *The Prince and the Pauper* by Mark Twain, collaborative groups are assigned sections of the book to script. These students make a readers' theater presentation for another class. After the performance, students have an opportunity to interact with the audience and answer questions about the story for those who have not yet begun to read the book. The presentation is videotaped for future use by other classes.

- **On a daily basis students read both orally and silently as a means of comprehending printed text in all subject areas.**

Students engage in silent re-reading of Paul Galdone's *The Three Billy Goats Gruff* in preparation for a group choral reading.

During their study of the United States, pairs of fifth grade students take turns reading aloud lines from such poems as Phillis Wheatley's "Should You, My Lord" and Henry Wadsworth Longfellow's "Paul Revere's Ride."

- **Students read with increasing fluency, independence, accuracy, and understanding from a range of literature.**

In September, kindergarten children listen to the teacher read *Umbrella* (Taro Yashima) during story time. The book is placed on the library shelf for check-out. Children check the book out to "read" the illustrations, then it is left idle for several months. Alex rediscovers the book in March. He checks it out and realizes he is now able to read much of the text by himself. He shares the book during partner reading with Michael. The book then becomes popular again, with many children requesting to check it out and "read" it with their newly found skills.

Second grade students in a bilingual classroom begin the year with a daily five-minute period of silent sustained reading. Maria, who is reading in her primary language, initially has a difficult time sustaining the activity for the entire time period. By the end of the year, she is engaged in the reading activity, absorbed in books of all types and actively reading, even though the time period has been increased to 20 minutes.

After reading their core book *Hatchet,* by Gary Paulsen, a sixth grade class decides to examine further the theme of survival. Using such self-selected texts as *My Side of the Mountain* (Jean George), *Julie of the Wolves* (Jean George), *A Boat to Nowhere* (Maureen Wartski), *Sadako and the Thousand Paper Cranes* (Eleanor Coerr), *In the Year of the Boar and Jackie Robinson* (Bette Lord), and *Number the Stars* (Lois Lowry), and after viewing related films, students realize that survival has a number of meanings and strategies.

Liu's portfolio contains a summary of all the self-selected and classroom core works she has read in the seventh grade. The summary contains both the number of books and the number of pages that Liu has read each quarter. Through a teacher-student conference about the portfolio, it becomes clear that her reading fluency has increased.

- **Students read in different ways for various purposes.**

Fourth graders Lauren and Amy are developing a zookeeper's manual. Using the school library, they research the food, climate, space, and other requirements for animals most commonly found in zoos. The zookeeper's manual, illustrated in full color, is full of tried-and-true advice.

In researching the rain forest, sixth graders Mario and Kevin read literature and student magazines about the topic, visit exhibits, and view relevant films, videos, and laser discs. Each of the two students writes a short paper identifying what he believes every student ought to know about the rain forest. A student editorial committee then reviews the papers, and the student authors appear on a teleconference broadcast to every classroom. Mario participates in the teleconference in both English and his primary language.

Jennifer and Michelle are making a report on Harriet Tubman as a biographical project in their seventh grade language arts class. The girls go back through the notes they have taken over the past two weeks and pull out the most significant experiences from this courageous woman's life. They discover that they had gathered few facts from Harriet's early life and ask for some library time to search out additional information.

Eighth grade students have just completed a thematic unit on "What the Future Holds." The teacher asks the students to look at their own possible future careers and write to experts working in their fields, asking the experts what they (the students) need to do to prepare for their careers, and what the experts are now reading to make them more knowledgeable about their fields. Araceli has always wanted to be a marine biologist. She writes to Scripps Oceanography Institute and receives a letter from a young marine biologist that includes copies of several recent journal articles, which she then reads during sustained silent reading time.

The program includes writing to construct and clarify meaning and directs attention to the various stages of the writing process.

- **Students who may be prewriters author stories through creating drawings or wordless text.**

Kindergarten students paint on the easel weekly. Each painting is discussed by the student and an adult. If the student desires, he or she dictates a story to the adult, and the adult writes the story on the finished painting.

After their teacher has read Munro Leaf's *El Cuento de Ferdinand (The Story of Ferdinand)* to kindergartners, they decide to write sequels to the story in their primary languages on the subject of Ferdinand's life after he leaves the bullring. Through a series of four sequential drawings, the children depict Ferdinand's life as a florist, poet, farmer, and other occupations. Some children write scribble captions under their pictures; these are then "read" to a partner, classroom volunteer, or the teacher.

First grader Allison is engaged daily in writing a journal. Early in the year, her "writing" was mostly in picture form, sometimes with scribble writing or strings of letters, or the alphabet. Now, this emergent writing is being replaced with words, and even sentences.

Seventh grade students developing English proficiency select a partner class with third grade students at a neighboring elementary school. After studying story-making and reading *Alexander and the No Good, Horrible, Very Bad Day* and *Atariba and Nicquayona,* the seventh graders create their own bilingual children's stories and present them in an authors' party with the third grade class.

- **Early in the writing process, students invent spelling. In later stages of the writing process, students use a variety of sources for correcting spelling. Final written products include correct spelling.**

First grade students who are involved in Earth Day as part of their environmental studies visit the school's recycling bins. Following class discussion, they work on the computer with partners to draft short articles on recycling for a class newspaper. Students use the computer "dictionary" to check for spelling errors. With the assistance of partners and/or the teacher, they "discover" the correct spelling or locate it in the dictionary and make the changes. The student newspaper is published and sent home.

Brandon, a second grade student, raises his hand for help during a writing workshop. He says he is "stuck" because he does not remember how to spell *coyote*. After being asked where he remembers seeing the word before, he says, "Oh, yeah! We have *Coyote Goes Hunting for Fire* (Margery Bernstein and Janet Kobrin) in our classroom library. I can find it, now."

Mariko's editing partner, also in sixth grade, notices she has spelled *appreciate* three different ways on her rough draft "thank-you" letter. Mariko remembers that she has written the word correctly in her personal dictionary. She knows that *appreciate* is a word she uses frequently and adds it to her "Skills I Know" writers' workshop checklist, where it will become a permanent part of her rough-draft editing.

After interviewing parents and grandparents about old sayings, morals, or "cliches" with which they grew up, seventh grade students write fables for display in stores around town during the December holiday season. The fables are written in English and at least one other community language—Spanish, Korean, or Chinese. As the fables are being prepared for publication and display, a number of techniques for proofreading are used, including a run through the computer "dictionary" to check spelling and a conference with a "language expert" in the second community language.

- **Students model their writing after examples of quality literature.**

Fifth grade students read *Zeely* (Virginia Hamilton). Several sentences are chosen as examples of descriptive text. Groups of students are then asked to read certain sections again, looking specifically for sentences which appeal to their senses in describing various scenes in the book. After the sentences are identified, students place them on a chart, indicating which sense is being used in the description. They practice writing several sentences which are descriptive in nature.

As part of the preparation for a trip to Yosemite Institute, eighth grade students read excerpts from the writing of John Muir. For the next week, the students, working in cooperative groups, describe life in a variety of meter-square pieces of turf in the school yard. In their science journals, students write descriptions and make sketches and reflect on their observations in the style of John Muir.

- **During all stages of the writing process, students talk to each other about their work.**

"I don't like this part, but I can't figure out what's wrong," says fourth grader Andy, referring to his story on last week's soccer tournament. "Well," says Josh, "let me read it and see if I can help. . . . I see what you mean; it's not very exciting. Maybe you could put in something about how loud the crowd was." "Yeah, let me try that. Thanks!"

As part of their writers' workshop choices, fifth grade students may sign up in groups of two to go to the "Conference Corner" to discuss writing in rough-draft form. Mei and Christina are discussing the ending for a poem, which is about a broken friendship. While Christina shares ideas for an ending, she also suggests that Mei add more details to the poem so that readers will be better able to understand her feelings.

Before writing fairy tales of their own, seventh grade students, working in collaborative groups, some organized by language dominance, review fairy-tale books the teacher has provided that illustrate various attributes of fairy tales, such as good and evil, magic, and happy endings. Each group is then assigned one attribute and lists examples of that attribute in their books. As students begin to write their own fairy tales, they use the posted lists as resources.

- **Students use the writing process while writing on self-selected topics and teacher-assigned topics.**

After a visit from a fire fighter, first grade students write a group experience story with their teacher. The teacher models the process of writing through the stages. Prewriting includes a brainstorming of everything that occurred. The story is then drafted; revised; edited for spelling, punctuation, and grammar; and then copied onto a chart for use the following day.

Third grade students read and listen to readings of many versions of *Goldilocks and the Three Bears*. They then read *Deep in the Forest* (Brinton Turkle), a textless variation of the Goldilocks story. The students then create their own text, which is modeled after one of the versions of Goldilocks.

At the beginning of the year in a writer's workshop, sixth grader Marcela chooses to write about the birth and first six months of her baby sister's life. She works on the piece during the first quarter. At the end of the quarter, she decides to include it in her portfolio as a piece on which she would like to keep working. By the end of the semester, Marcela returns to the piece and completes it. The story is then printed in the school newspaper.

- **Students produce final drafts in which the meaning is made clear to the reader and in which the conventions of language—grammar, usage, spelling, and handwriting—are used appropriately.**

Kindergarten students trace over stories they previously dictated to their fourth grade partners, who watch to verify that the letters are formed correctly. These works are posted on the bulletin board.

While third graders are preparing written reports on winter holidays around the world, the teacher notices that names of countries and citizens of those countries are not being capitalized in the children's rough drafts. After a minilesson on capitalization, students edit their reports and make corrections for their final drafts.

A small group of fifth grade students receives instruction on the use of quotation marks before continuing in their writer's workshop period. The teacher delivers this minilesson after pinpointing the need during conferencing with these students. The students then return to their revising and editing.

Prior to writing final drafts, eighth grade students review various stories, noting tense. Students then review their own and a partner's work in an effort to ensure a continuum of tense for clear meaning throughout the writing pieces. These students previously learned to check systematically for one thing at a time to ensure clarity.

- **Through a variety of writing experiences in all subject areas, students synthesize information and gain insights.**

Second grade students record daily their observations of seeds planted as a class science project. Their journals include illustrations, measurements, and written observations. At the end of the project, students are asked to summarize orally their learning from the project. Their presentations are videotaped.

In response to a flyer announcing a contest sponsored by the local newspaper, students in an eighth grade language arts class write essays on the theme "What the Constitution Means to Me." After brainstorming about people and experiences, the students realize that some items on their lists are more significant than others. Identifying the significance of what is remembered makes a more powerful essay than the memory itself. Students go on to write engaging and perceptive essays, which are sent to the contest after they are published using a word processor.

- **From the time they enter school, students write daily as a way of "making meaning" in all subject areas.**

Kindergarten children draw pictures to illustrate the problem the teacher presented during a math lesson. The graphic representations are later changed to numerals, and finally back to written form in the story-problem chart displayed on the chart rack.

Each day, one student from a fourth grade class takes home the class's journal to record the significant events of the day. A few minutes at the end of the school day are devoted to suggestions from the class on what might be included in the journal. Individual journal entries are embellished with drawings, weather reports, community news, and other information. The journal writer for the day makes the final decision about what is to be included in the entry.

After reading their social studies book and related material regarding the Westward expansion, including working on the computer program "Wagon Train 1848," fifth grade students produce individual journal records of their own trips across the United States.

- **Students revise their writing using various techniques.**

Letisha refers to the revision sheet in her portfolio when she finishes her first draft. As she reads each section on the sheet, she reviews her draft to determine whether she can change her paper to better satisfy the rubrics developed by her third grade classmates and the teacher.

Responding to a suggestion from a member of his conference team, fifth grader Kyle uses the word processor to rearrange the paragraphs of his research report about dinosaurs. He creates new transitional sentences.

As a member of a writer's workshop group, each seventh grade student reads the drafts of the other students' papers, making comments on a form provided for this purpose. When papers are returned, each student has suggestions for revision from each of the other members of his or her group. Revisions are made.

- **Students write frequently in response to writing prompts.**

As fourth grade students are introduced to a new literature selection, they receive a writing prompt to contemplate. As part of their homework for the week, students think about the prompt, then discuss it in their reading workshop groups. They respond to the prompt in writing at the end of the week.

Eighth grade students enter their classroom after recess on Friday and observe a writing prompt written on the overhead projector. They settle down immediately to do a quick-write of a list of ideas in preparation for a class brainstorming session. After a brief time, students share their ideas, which are recorded using the overhead projector. Then, students write in their journals in response to the original prompt.

The program includes attention to oral language development and proficiency.

- **As part of making meaning, students make predictions, ask their own questions, and initiate discussions about their interpretations of the text.**

  Each year, third grade students present a dramatic production of some of the literature they have read. This year's drama will honor Roald Dahl. As part of the preparations for the production, students think of questions they would ask Mr. Dahl if he were present, then research his possible answers. Working in pairs, students write scripts depicting scenes from one of Mr. Dahl's books. The dialogues must be original, but they must communicate the flavor of the book.

  A group of fifth grade students choose to read a book in its entirety after reading an excerpt in their literature reader. They each write questions and observations during their reading and come together to discuss the book when all are finished. One student is chosen as a recorder, and he or she presents a synopsis of their discussion to the entire class.

  In cooperative groups, seventh grade students read a selection, stopping at preselected points. Students in each group take turns writing questions generated by the group before continuing. After reading, students discuss the questions, offering interpretations.

- **Students regularly engage in formal and informal oral discussions; each is given opportunities to participate.**

  Every two weeks, at the end of the silent sustained reading period, third grade students and the teacher give 60-second oral book reports to the whole class on the books they are reading.

  In a fifth grade mathematics lesson, children are divided into groups. Each group is given a problem to solve cooperatively as each member reads a clue. After the groups arrive at solutions, they are presented graphically to the class. All members of the group must sign the graphic as an affirmation that every member was involved in solving the problem.

  Sixth grade students read or listen to current events portrayed on television, in the newspaper, and in news magazines. Individually or in groups, students share information with the class. In teams, students debate both sides of the issues.

- **Students use appropriate tone, style, and voice when preparing oral and written presentations for intended audiences.**

Second graders Tony, Joey, Billy, and Luis are practicing for a dramatized production of *The Three Billy Goats Gruff*. Each student practices his part, carefully adjusting the tone and volume of his voice to match the character portrayed.

Each year for Poetry Week, students carry a "Poem in My Pocket." Students ask to hear each other's poems. At the request of others, individual students recite the poem using proper style or tone. Students collect their poems in personal poetry books.

After researching famous authors, students dress up and become the authors they have researched; their costumes, voices, and mannerisms reflect the findings of their research. An authors' reception is held in the library, and language arts classes are invited to meet and hear from the authors they will be studying throughout the year.

- **Students examine the qualities of effective speech in situations involving various audiences, purposes, or forms.**

After studying the persuasive techniques of advertising, sixth grade students write and perform their own public service announcements about the school's "Read a Book to Another Family Member" campaign. The advertisements are videotaped for future viewing. The students who speak English as a second language are encouraged to produce advertisements in their native languages. The advertisements are sent to a local public television station for viewing.

Eighth grade students listen to audiotapes of effective speeches, then analyze qualities that contribute to the impacts of the deliveries. Students then write, revise, and deliver speeches on topics of great personal importance. The speeches are audiotaped.

- **Students see themselves as orators and storytellers. Frequently, they create dramatizations of works read.**

First grade students present weekly puppet shows to classmates. To dramatize the story being used in the classroom, a small group of students prepare the puppets, practice, and produce the story using their puppets. The production is videotaped.

After hearing a number of Aesop's fables, fourth graders choose fables they will retell to another class. An Aesop's Fables Festival is held on Halloween Day. Costumes, lighting, and props are all planned by the storytellers.

After reading the book *The Phantom Tollbooth*, by Norton Juster, sixth grade students decide to write, act in, and present a play based on the story. The book is divided into sections or acts. A group of students is responsible for writing the script for one act and presenting it to the other groups.

- **Students speak in their home/community languages.**

Spanish-speaking sixth grade students who have read *El Viento en los Sauces (The Wind in the Willows)* discuss in Spanish the adventures of Mr. Rat, Mr. Mole, and Mr. Toad. They then prepare a puppet play of key scenes, which they present to younger Spanish-speaking students at the school.

- **Students talk and write about works they have read, identifying favorites and telling why they like them.**

Fifth grade students share oral reports and self-selected books with parent volunteers who come in on a weekly basis. Each child brings his or her book to the parent volunteer, who uses it as a prompt to determine the child's knowledge and opinion of the book.

Each language arts class in the school prepares five commercials a month about favorite books. The commercials are videotaped and broadcast throughout the school every Friday after school from 3 p.m. to 3:30 p.m.

The program includes an assessment component that encompasses the full range of language arts goals and incorporates performance-based approaches to assessment.

- **Samples of student work are collected in a portfolio, the overall content and purpose of which is determined by the site- or grade-level team.**

Kelly's portfolio contains samples of ten types of writing determined by the portfolio committee. Every other Thursday, Mary and other students in her seventh grade class are given a time to review their writing folders and select works to include or revise before including them in their portfolios. At the end of each quarter, oral portfolio presentations are made by students to a review team consisting of two parents, four students, one teacher, and one other member of the school community. Working in pairs, panel members hear from ten to 15 students in two class periods.

- **Students actively participate in evaluating their written and oral work.**

Jason, an eighth grader, views a videotape of his oral presentation on the life of Richard Nixon. While viewing, he uses the evaluation rubric developed by his teacher to evaluate his oral presentation. Jason then meets with his teacher to discuss ways to improve future presentations.

Xavier examines poems he has written over the past three years. He selects a piece which clearly and beautifully conveys his enjoyment of playing the trombone, then enters his piece in the eighth grade poetry competition.

- **Both formal and informal teacher observations of students, their work, and classroom interactions are used frequently in the overall evaluation of student progress.**

The California Language Record (CLR) is used in a seventh grade classroom as a starting point for observation of students' acquisition of all the language arts processes. The CLR includes student self-assessment and conferences, student comments to the teacher, parent comments, and observations by the teacher of the student's reading, writing, speaking, and listening.

- **Teachers regularly use student work to evaluate, adjust, and/or plan future instruction.**

Chris, a third grader, meets formally with his teacher once a month to his discuss progress in writing. Chris's portfolio is used as the basis for this discussion. Informal meetings between Chris and the teacher occur as Chris is writing. Based on these discussions and observations, the teacher plans Chris's writing program for the following month.

- **In assessing student language abilities, teachers take into consideration information gained from students and parents regarding the students' home languages.**

At the beginning of the year, the language arts teacher interviews the parents of the first grade students about the language arts strengths of their children. Strengths in home languages are noted, and reading, writing, speaking, and listening strengths at home are discussed and reinforced in the classroom.

Professional Practices

Teachers use a wide variety of instructional practices based on a full understanding of the *English–Language Arts Framework*. Teachers:

- Read and talk about the *English–Language Arts Framework* in settings such as grade-level meetings and faculty meetings.
- Actively seek professional growth opportunities that expose them to new and more powerful language arts instructional strategies.
- Try new roles and instructional strategies in their classrooms, such as:
    - Dialectical journals
    - Hot seat
    - Jigsaw
    - Debates
    - Choral/oral reading
    - Readers' theater
    - Paired/shared reading
    - Scripting
- Adopt new instructional strategies and then share successes and failures with their colleagues amid a climate of mutual support. They work first with a grade-level colleague, then with other teachers in their school, and eventually work with teachers from other schools and professional organizations.

Teachers recognize that improvement in delivering language arts curriculum and instruction is a result of focused, ongoing professional development. Teachers:

- Identify professional growth opportunities by:
    - Reading professional journals
    - Observing other teachers in the school and district

  - Participating in PQR as a consultant
  - Participating in book review groups

- Belong to professional organizations, such as:
  - California Reading Association (CRA)
  - California Association of Teachers of English (CATE)
  - California Association for Bilingual Education (CABE)
  - California Teachers of English to Speakers of Other Languages (CTESOL)

- Attend and stay involved in the subject-matter projects, including:
  - California Literature Project
  - California Writing Project
  - California Language Minority Project

- Participate in and serve as facilitators in district, county, and state language arts activities such as:
  - Scoring for the California Learning Assessment System (CLAS) language arts assessment
  - Working on a CLAS language arts test development team
  - Serving on a district curriculum committee
  - Becoming a language arts mentor teacher

Teachers enrich the language arts curriculum by making logical connections across curricular areas. Teachers:

- Before teaching a piece of literature, carefully read it to identify important themes for discussion, connections to learners, connections to other curricular areas, and events that were happening at the time in which the story takes place. Teachers then think critically about what is most important to address during classroom discussion.

- As often as possible, choose to teach those works with which they are familiar and like.

- Frequently meet in departmental and cross-curriculum and cross grade-level groups to talk about coordinating and connecting the various disciplines.

- Bring their personal experiences, interests, and knowledge into their lessons, including talking about books they have read and sharing their own writing with their students.

Teachers assess student performance by:

- Collecting and talking about student work on a regular basis
- After gathering student work, collaboratively identifying strengths and weaknesses in all language arts processes
- Using prompts that are similar to CLAS prompts
- Working with other teachers and students to develop rubrics for student work
- Allowing for diversity in assessment, including oral and group project work
- Encouraging student self-evaluation

Teachers identify, use, and reevalute the use of available resources. They:

- Work with the school's administration to discover and monitor human, instructional, and financial resources for language arts improvement.
- Actively pursue additional funds outside the school, such as Teacher as Researcher grants awarded by the National Council of Teachers of English (NCTE).
- Collaborate with other teachers within the school to develop materials and rely less on buying prepackaged materials.
- Rely less on the textbook anthology as core material and use it as a supplement to a core list of literature.
- Allocate resources to pilot innovative strategies to teach the language arts and then reevaluate these strategies before committing additional resources.

Teachers use the valuable and unique resources available in the community. Teachers:

- Use community resources such as storytellers, guest readers, performers, Career Day speakers, and nontraditional role models.
- Support parents as educational partners by encouraging parents to:
  - Read to their children.
  - Take their children to the library.

  - Model reading and writing at home.
  - Participate in classroom activities.

- Communicate with *all* the parents about the language arts program through:
  - Parent Portfolio Night
  - Language Arts Parent Night
  - Back-to-School Night
  - Parent/teacher/student conferences
  - *The California Learning Record*
  - Classroom newsletters
  - Distribution of the California Department of Education's booklet *The Changing Language Arts Curriculum, A Booklet for Parents.*

Language Arts Resources

The following publications are available from the Bureau of Publications, Sales Unit, California Department of Education, P.O. Box 271, Sacramento, CA 95812-0271; phone: (916) 445-1260.

Bilingual Education Handbook: Designing Instruction for LEP Students (1990)

Celebrating the National Reading Initiative (1989)

The Changing Language Arts Curriculum: A Booklet for Parents (1990); Spanish Edition (1991); Korean Edition (1993)

Effective Language Arts Programs for Chapter 1 and Migrant Education Students (1989)

English–Language Arts Framework for California Public Schools, Kindergarten Through Grade Twelve (1987)

English–Language Arts Model Curriculum Guide, Kindergarten Through Grade Eight (1988)

English–Language Arts Model Curriculum Standards, Grades Nine Through Twelve (1991)

Foreign Language Framework for California Public Schools, Kindergarten Through Grade Twelve (1989)

Grouping Students for Effective Language Arts Instruction (October, 1991)

Handbook for Planning an Effective Literature Program, Kindergarten Through Grade Twelve (1987)

Handbook for Planning an Effective Writing Program, Kindergarten Through Grade Twelve (1986)

Literature for History–Social Science, Kindergarten Through Grade Eight (1991)

Literature for Science and Mathematics, Kindergarten Through Grade Twelve (1993)

Practical Ideas for Teaching Writing as a Process (1987)

Read to Me: Recommended Literature for Children Ages Two Through Seven (1992)

Recommendations of the Curriculum Development and Supplemental Materials Commission: 1988 Adoption, Basic Instructional Materials in English-Language Arts (1988)

Recommended Literature, Grades Nine Through Twelve (1990)

Recommended Readings in Literature, Kindergarten Through Grade Eight (1986); Annotated Edition (1988); Addendum (1990)

Recommended Readings in Spanish Literature, Kindergarten Through Grade Eight (1991)

Secondary Textbook Review: English (1988)

The following statewide subject-matter projects provide professional development:

California Literature Project, Gretchen Laue, Executive Director, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0415; (619) 534-1600

California Writing Project, Mary Ann Smith, Executive Director, School of Education, University of California, Berkeley, CA 94720; (510) 642-0963

California Language Minority Project, Rosalia Salinas, Executive Director, c/o San Diego County Office of Education, 6401 Linda Vista Road, San Diego, CA 92111; (619) 292-3522

The following organizations are available for additional information:

Academic Model Technology Project, Project LINKS, Ginger Britt, Director, Laguna Road School, 300 W. Laguna Road, Fullerton, CA 92635; (714) 447-7725

California Association for Bilingual Educators, 926 J Street, Suite 810, Sacramento, CA 95814; (916) 447-3986

California Reading Association, 2790 Harbor Blvd., Suite 204, Costa Mesa, CA 92626; (714) 435-1983

California Teachers of English to Speakers of Other Languages, California Adult Education, 429 J Street, #300, Sacramento, CA 95814; (916) 557-1033

National Council of Teachers of English, 111 Kenyon Road, Urbana, IL 61801; (217) 328-3870

Mathematics Criterion

Focus Statement

The goal of mathematics education is mathematical power for all students. In empowering mathematics programs, the teacher is a facilitator and catalyst for learning, rather than the "center" of classroom action. The student is primarily responsible for the thinking. Students formulate problems and choose approaches to solutions. Students talk and write frequently, reflecting on what they have done, clarifying their own thoughts, and communicating their ideas and results to others. Students decide what materials and tools to use from among the constantly available calculators, computers, and manipulative materials. Students are asked to organize and record their accomplishments, findings, or conclusions and to give evidence or arguments supporting their conclusions. Students are consistently expected to use mathematics to make sense of situations and to achieve purposes that have meaning for them.

The development of mathematical power requires work that is challenging and engaging for every student and that accommodates the full range of cultural and economic backgrounds as well as achievement levels and interests represented in California's diverse student population. The tasks and problems students work on are accessible to all students; they are rich and open and can be investigated at many different levels. Low-achieving students are not given "simplified, meaningless" material. At the same time, no student is "held back" from investigations of particular mathematical ideas because the content is felt to be more appropriate for a later grade.

Assessment of students' work is designed to reveal their mathematical power; it focuses on what they know and can do rather than what they don't know or can't do. All the dimensions of mathematical power—thinking and acting mathematically, using understanding of important mathematical ideas, using tools and techniques, collaborating with other students, and communicating results according to audience and purpose—are involved in major assessment as well as instructional tasks.

Student Work

The program presents students with connected and accessible mathematical experiences organized into coherent units of rich, mathematical lessons and tasks.

- **Students work on units, coherent "chunks" of work lasting one to six weeks, that interweave strands and deepen unifying ideas.**

- Students work on multiday lessons that have multiple instructional objectives.

- Students learn and use skills and concepts within larger mathematical units and tasks. For example, students use computational procedures as tools within larger mathematical units and tasks rather than as ends to themselves.

- Students explore mathematical ideas in depth over long periods of time, within a grade and from year to year. Gradually, tasks increase in duration and include more abstraction and formalism; students grapple with increasingly complex questions and investigations and assume more and more responsibility for developing complete and comprehensive reports or products.

Important mathematical ideas and their interconnections are at the heart of the program.

- Students work on problems and investigations that deal with more than one idea at a time.

- Students encounter mathematical ideas in different ways as well as in different contexts.

- Students explore the interconnections and relationships among mathematical ideas.

- Students revisit the central and most useful ideas again and again in different contexts. As students mature, they investigate these ideas more and more deeply; problems in upper elementary grades are not contrived to keep solutions confined to integers.

- Students develop "number sense" by encountering and using quantities and their representations in realistic contexts. The numbers in the problems are realistic.

The program is designed so that students are consistently engaged in experiences that require them to be responsible for their thinking.

- Students work on tasks that are complex—they require time and deliberation; they are frequently open-ended and have multiple solutions.

- Students participate in the process of assessment. They help to create and apply standards for quality work.

- Students formulate and create mathematical questions and determine what they already know and must find out.
- Students make and refine mathematical generalizations as they investigate rich tasks and problems.
- Students interact with one another while they solve problems, often in small heterogeneous groups. They share approaches, conjectures, difficulties, findings, and evidence within their groups and with other groups.
- Students decide which of a variety of constantly accessible manipulative materials and technology to use to explore mathematical ideas and to solve problems. All students have access to calculators and computers and decide when and how to use them.
- Students devise their own procedures for solving problems that involve calculations.
- Students choose an efficient means for calculating a numerical result in a given situation: mentally, with paper and pencil, or using a calculator or computer.
- Students use a variety of techniques, including pictures, diagrams, charts, graphs, spreadsheets, tables, scatter plots, matrixes, and physical models.
- Students organize and record their accomplishments, findings, or conclusions and give evidence or arguments supporting their conclusions. At times, students present their results and conclusions to various audiences such as classmates, the teacher, another class, younger students, or adults at home, with the purpose of informing, explaining, teaching, and/or persuading. They use multimedia approaches for making the presentations.
- Students reflect on what they have done; they examine their own solutions and interpretations critically, as well as those of other students.

The implementation of an empowering mathematical program assumes that students have a wide range of cultural, economic, and linguistic backgrounds, as well as achievement levels and interests.

- Students work on tasks and problems that are accessible to all students; they are rich and open and can be investigated at many different levels.

- **Students work on tasks that frequently use students' personal, family, or cultural experiences to create the specific context.**

- **Students use their own language and vocabulary to express mathematical ideas.**

- **Students work on tasks that they have chosen as individuals based on their developmental needs and individual interests.**

- **Students frequently work in collaborative learning groups. In particular, students are encouraged to value the points of view and the experiences of others.**

- **Some students go more deeply into some aspects of tasks and investigations, in accordance with their interests or their rapid grasp of the ideas.**

Examples of Students Working

Kindergarten students develop locational vocabulary as they play and talk about their lives. "The lamp is on the table." "The ball is under the chair." "Joey lives across the street." "Grandma lives far away." They tour the school, locating the office, library, and other locations. They take a neighborhood walk and visit students' houses, businesses, and other places. They informally compare distances by deciding which classroom is the closest to the playground, and they estimate and then share the number of steps from their classroom door to the teacher's desk.

In a first grade classroom, the students, with their teacher's help, record the morning and afternoon temperature each day for a quarter. At the end of the quarter, they graph the temperatures by number of days that each temperature was reached. They discuss the changes that occurred over the long period of time and notice that there were more days with cold temperatures than days with warm temperatures. The concept of graphing data is then extended throughout the year. Graphs are compared at the end of each quarter. Some of the students use computer-based graphing tools to make their presentations.

Second grade students Elisha and Adam are working separately on geometry explorations, using pattern blocks. They decide to work together. Previously, Elisha was working on a palace and Adam was creating a design. When they combine their their efforts and then begin to write about their work, they coin a word and call the combined construction a "palozine." In their separate writing they both use this new new word.

Second graders are asked to explain their procedures for subtraction. Sasha gives the following explanation for how she found the answer to 56 – 18. "Six needs two more to make eight. I can take eight from eight. I'll take ten from the five tens and give them to the six ones. Now I can take eight from sixteen, and there are eight left over. Instead of five tens, there are four. When I take away one, there will be three. The answer is three tens and eight ones. That's 38!"

Second grade students share ways they solve addition problems. Each student shares how he or she solves problems, with some students using the board, overhead projector, or computer to explain their thinking. The teacher accepts all their strategies and does not attempt to teach the "correct" strategy.

Fourth grade students in groups of four to six distribute a small jar of candies (number unknown) among themselves so that each has a fair share. They calculate, using their own (noncounting) methods, the total number of candies in the jar. The groups compare their work, with the teacher recording the students' directions and equations for determining their results. The class compares the total number of candies in each of the jars and the fair share amount of the various groups. They discuss what would be a fair share if the candies in all the jars were collected and distributed among the whole class. In small groups, they determine these numbers using just the numerical data from the various groups.

Fourth grade students play tic-tac-toe, rainbow logic, nim-type, and other strategy games. They discuss what a strategy is and try to devise a winning one by examining such things as good opening moves and best defenses. They test their strategies by playing games and analyzing possible moves. The students then design their own board games, building into them opportunities for other students to use various strategies. They use dice, spinners, and cards that they construct or design. They use computer graphing software to illustrate their findings regarding probability.

In December, fourth grade students make a calendar for the new year and pen in planned events. Throughout the year students use their calendars to solve problems about how many days until special events. They examine calendars from previous years to see how they vary and to look for patterns. They use a set of perpetual calendars to determine the day of the week on which they were born or other historical events.

Fourth grade students keep track of the time they spend watching TV and doing homework in a given week. While reporting their data for a class graph, some students use hours and minutes, some use fractions of hours, and others use decimals. As students begin working together in small groups to organize the data, an argument erupts about the meaning of 6.25 hours. Many students think 0.25 hour means 25 minutes; others say it means 15 minutes. Rather than resolving the dispute herself, the teacher directs the class to discuss in small groups, "How many minutes is 0.25 hour?" Each group creates a convincing argument for its point of view. Group reporters then report their theories and evidence to the class.

Fifth graders run various distances and keep records of their exercise heartbeats and resting pulse rates along with records of their distances and times. They record their findings on bar graphs.

As part of a data analysis unit, fifth grade students, who are in charge of the school's snack booth, decide to survey students to find out their favorite snacks. After receiving 500 responses, they decide to organize their information in a report that includes several bar graphs. They prepare a videotape on the topic, which they present to the student council.

A fifth grade class wants to paint a scaled map of the United States on the playground. After deciding on a size that will fit on the blacktop, they cut the class map of the United States into 1-inch grids. The class decides to increase the scale of the map to a ratio of 1 inch to 1 foot. After increasing each square to scale, they trace their square on the grid on the playground and paint it.

Fifth grade students bring cereal boxes from home for a unit that integrates mathematics and nutrition. Students compare the nutritional values of various cereals. They determine and compare the price per serving for various cereals and for different size boxes of the same cereal. They survey the class to determine favorite cereals. Using appropriate computer programs, they graph the results of the different activities and write reports, interpreting and sharing their findings.

In a sixth grade unit on area and perimeter, students are given a silent reading and writing assignment. They read a dialogue between two students at another school who have been given an assignment—they have to find the area of an irregular blob that has been drawn and copied. One of the students thinks that if they lay some string out along the (perimeter) edge of the blob, then rearrange the string into the shape of a rectangle, then the area will be easier to calculate. The students are asked to write whether they agree with the strategy or not and explain why they agree or disagree. After writing, students discuss their ideas briefly with the class, then in greater detail within their groups. Groups are asked to reach consensus and prepare arguments to present to the class to convince the class of their results. Groups that cannot reach consensus are instructed to devise experiments to help them decide on the validity of the string method and present their experiments. Debate continues during presentations, and a variety of arguments and examples are given until the class agrees on a conclusion. Finally, students are asked to write their conclusions and tell which arguments they felt were most convincing.

As part of a unit investigating area and perimeter, sixth grade students are asked to think about the relationship between the two. Students work in small groups, using tiles to represent tables just large enough for one person to sit at each side. Given sets of tables which can be arranged to make larger banquet tables, students are to discover the greatest and least number of people that can sit at a banquet table.

Sixth graders post large representations of the 4x4 Latin squares they created. Working in small groups, they describe similarities they notice in the Latin squares. Volunteers are asked to share their findings. Some conjectures hold true for all the samples, while others do not. Students rewrite their conjectures by using the group input to revise their thinking.

As part of a unit on scaling, sixth grade students are asked to make a two- or three-dimensional scale model. Jaime and Mary decide to build a scale model of a par course for their school. Becky and Lisa make an enlarged drawing of a stamp. Each pair writes a summary report identifying the scale factor and describing what they did to make the model, including any mathematical calculations.

Data about professional baseball players are entered into the computer by seventh grade students working in pairs. The students' task is to examine player performance data and select baseball players who will add to the strength of their teams. Jackie and Allison show great interest in their spreadsheet displays and ask for ways to have the computer help them do the computation for statistical categories they think will be useful. They prepare individual reports using the results of their computer work to support their selections. In fact, both girls add copies of their spreadsheet to their investigations, with key points highlighted in yellow.

As part of the final investigation for designing spaces, seventh grade students build a model of a dwelling, write detailed structural plans, and describe their project. The language arts/history–social science teacher and the mathematics teacher, working together on an interdisciplinary team, add a new piece to the final project. In language arts/history–social science, students are working on a family history project. For the mathematics final investigation, students are asked to build a dwelling that would be appropriate for the climate from a geographical location that was part of their heritage as described in their family history project. They are also asked to use available building materials from that geographical area.

Angela, a seventh grade student from Puerto Rico, can understand and speak a little English. However, she only writes in Spanish. She writes an explanation of how she solved a problem in mathematics. Her teacher has the work translated, and both the Spanish version and the English translation are placed in Angela's portfolio.

Seventh graders are involved in creating the standards or criteria for scoring an open-ended problem that they worked on during the week. They determine what characteristics they would look for in a well-done write-up of the problem, what characteristics would identify the work as acceptable, and finally what indicators would tell them that their work needed to be revised. After recording the criteria for each category, the students read and score a set of anonymous papers.

One of the survey questions in a seventh grade unit on statistics is, "In how many languages can you count to ten?" Although seven different languages are spoken by students in the class, no students can count to ten in more than three languages. Everyone wants to learn the numbers in more languages, so the class spends a few minutes a day learning them. Rocio, Olga, and Miguel teach the numbers in Spanish; Soonthone and Kiat teach Cambodian; Szu Juan and John teach Cantonese; and so on. As language diversity becomes more accepted and valued, some students decide to summarize group presentations in their primary languages. This experience helps language minority students gain a greater sense of belonging and greater access to the curriculum, while also helping all students learn to appreciate diversity.

As part of a unit on measurement, seventh grade students are asked to investigate the proportional relationship between the circumference of a person's head and the individual's height. Does it change with age? Working in small groups, students measure their group members' heads and heights. Each student gathers additional data from outside the classroom. The data are analyzed in groups and shared orally. Individually, students will write conclusions and summaries.

During a unit on volume and surface area, seventh grade students are asked to determine the most cost efficient way to package and wrap a variety of daily supplies of space food for astronauts. Using 2-centimetre cubes (each representing a one-day supply of food) and graph paper to wrap each package of food containing various numbers of daily supplies, students build packages and make jackets called "space armor." The cost of this space armor is $5 per square centimetre. Groups share their designs and then individually write summaries and conclusions about the most cost efficient method of packaging and wrapping.

In their unit on functions, seventh grade students are learning to represent functional relationships in a variety of ways. After several whole-class and small-group activities, students begin working on a menu in which they are given a selection of activities of varying levels of complexity from which to choose. Some students work alone, while most choose instead to work with partners. While Ricky and Sara are making a table to help them find a linear relationship in Cube Patterns I, Katie and Gabor search for an algebraic sentence to represent the relationship in Town Hall Tiles, which is a quadratic function. Bernie, meanwhile, works alone attempting to generalize a three-dimensional version of Town Hall Tiles.

As part of a unit on data collection and analysis, eighth graders are given a set of TV ratings for the three major networks. Each network can report that it is the most watched depending on how the ratings data are interpreted. Working in small groups, the students are assigned to promote a particular network. Using calculators and computers, as well as paper and pencil, each group analyzes the data, doing such things as calculating the means, medians, and quartiles. They examine their analyses and prepare reports substantiating their claims that their networks are most watched.

After spending six weeks exploring the effects of linear and exponential growth, eighth grade students are ready to share their final project reports in a student seminar. The students read each other's work while looking for examples of well-done components—graphs that are clean and support conclusions, an interview that is interesting or informative, organization that makes sense, evidence of mathematical thinking, and accuracy of calculation. After some discussion of the exemplars, students have a chance to revise their reports before turning them in.

While working with a unit on factoring and having cut rectangles representing all factor pairs of a number, eighth grade students Howard and Jamie become excited when they realize that they can check for all factors of a number through a procedure known as the root of the largest square within the number. They check their theory by trying many numbers to see whether this is true.

When looking for a pattern to help simplify the task of growing numbers, most students in the eighth grade class realize that when they grow by addition, they need find only the difference of the end and start numbers and divide this difference by the number of steps they are using. When looking for a pattern for growth through multiplication, most students work hard using calculators to find the most precise number, taking a number to seven or eight places beyond the decimal point. However, Reuben and Maral realize that if they find the "power of the root," the whole procedure always works. Using their scientific calculators, they excitedly check examples such as $\sqrt[5]{3}$ to triple a number in five steps and $\sqrt[4]{2}$ to double a number in four steps. During class discussion following the lesson, both methods are described. Some students like the method used by Maral and Reuben and ask for their help learning the method. Other students decide they like their own method because it gives the same answer, and they really understand the method they have used.

During the oral presentation of the growth unit's "Growing Trees" activity, members of the eighth grade class realize that the group of David, Brandi, Pantea, and Karan have constructed their graphs using incorrect numbers. During their question time, Andy raises his hand and instead of telling them they are wrong, asks how they worked out their numbers. His questioning helps the group realize they made an error. They then tell the class they need to revise what they did.

Developing an Understanding of Multiplication

In **first grade**, Anna and Gary are using multiplication and division without knowing it. They count pairs of children in line by 2s; they count the number of fingers in a group of children by counting by 5s and 10s; they share a box of crayons so that each group member has the same number.

Toward the end of **second grade**, they solve "multiplication problems" without the help of formal procedures. For example, when each student is to make a journal of six pieces of lined paper, the teacher asks the class to figure out how many pieces of paper would be needed for all 27 students. The children approach the task in a variety of ways. Gary and some other children make six tally marks for each child and then count the tally marks. Others also make tallies, but then they circle groups of ten. Some children write down 27 sixes and try to add them, mostly by counting on from the last partial sum. Some children figure that their group needs 24 pieces of paper and then add seven 24s (for the seven groups in the class) to find the total. Anna, who is in this group, uses a calculator to make the addition easier. When the teacher asks the children to share their answers, all the responses are "in the ball park"; they are all close to 162. A few children have made a mistake in counting, and the group that added seven 24s forgot to take off six papers for the group that has only three students. None of the children are "in left field"; none has come up with an answer of 1242, which is a common response for students who solve this problem using paper and pencil procedures.

Early in **third grade**, in a math unit called "Groups and Collections," the students list things that come in groups of two, three, four, and so on up to 12, on large charts. They start with fairly common things, such as hands and feet under 2, tricycle wheels under 3, spider legs under 8, and eggs under 12. Soon, the excitement spreads and they try to think of new and different things. At home they get their parents and brothers and sisters involved. Anna's mother notes that a football team fields 11 players. Gary notices that the flag has seven red stripes. By the end of the week, the charts overflow with items.

The children then invent questions about the items on the charts, such as "How many legs do six spiders have?" They use counters, tallies, pictures, and other methods to answer the questions. The teacher then shows them how to write multiplication equations to represent their questions. Some children write multiplication equations and then look for questions, sentences, or stories to fit them. For example, for 3 X 6 = 18, Anna writes, "How many white stripes are on three American flags?" "There are 18 cans of soda in three six-packs." "An insect has three children who wanted shoes. How many shoes does the insect need to buy? The insect needs to buy 18 shoes because each baby insect has six legs."

Throughout the year, the children encounter many problems involving multiplication. When they are filling the bottoms of boxes with tiles (in an activity investigating area), they notice a pattern of four rows of five tiles. Another time they find all the possible different outfits combining four shirts with three pairs of pants. They explore the notions of commutativity and composite numbers when they try to find all the different ways towers of equal height could be built from the same number of blocks. For example, Anna finds that 20 blocks could build four towers of five blocks each, five towers of four blocks each, two towers of ten blocks each, or ten towers of two blocks each. Many children memorize several of the multiplication facts without practicing because they use them repeatedly in many situations. The teacher points out the advantages of knowing the facts and encourages those students who want to memorize them to go ahead and do so.

In the beginning of **fourth grade**, the teacher gives the students a problem that is similar to some they solved in third grade. "I have to order pencils for our class to use this year. How many should I order?" He asks the students to work in small groups and to write a report explaining how their group determined their answers. Anna's group writes, "At first we thought this was easy. We would need 28 pencils, one for everybody in the class. But then Henry remembered that everyone will need more than one pencil for the whole year. We estimated that everyone will use five pencils. We found the answer by adding 28 + 28 + 28 + 28 + 28. We need to order 140 pencils." Gary's group writes, "We spent a lot of time discussing how many pencils everyone would use for the year. Suzy takes real good care of her pencils, so they last a long time. Rita chews hers up, so they go fast. Gary is always losing pencils. We finally decided that we need to order one pencil each month for everybody. Since school goes from September to June, ten months, we would need 10 X 28 or 280 pencils." Another group, basing their calculation on a nine-month school year, determines that each student will need 18 pencils (two per month). They multiply on the calculator first and then "check" their answer by adding 28 eighteen times on the calculator. A different group bases its estimate on a seven-month school year and solves the problem (7 X 28) by adding 140 (they know that seven 20s is 140) and 56.

In the unit "Multiplication Patterns," students encounter multiplication in the form of geometric arrays. Students investigate prime and composite numbers, factors of numbers, square numbers, the symmetry of the multiplication table, and patterns of multiples on the multiplication table. The students solve many different problems requiring multiplication. They decide how to arrange chairs in the auditorium for a school assembly. They determine the average number of letters in their names by using a variety of methods, some of which use manipulatives such as tiles.

Most of the students realize that memorizing the facts is a lot faster than figuring the answer some other way; it is even faster than using a calculator. They share strategies for memorizing the times tables. For example, they count the facts they have not memorized, such as 7 X 8, and discover, to their surprise, that there are fewer than twenty. Although not every student has memorized all the facts by the end of the year, the teacher realizes that even those students who do not understood the basic concept of multiplication are able to solve multiplication problems in a variety of contexts. And they still enjoy mathematics class.

By **fifth grade**, the students are solving many problems involving multiplication of multidigit numbers using a variety of approaches and methods. They share, orally and in writing, their approaches and methods. In fifth grade, the teacher asks students to describe in writing some of the methods they use to find the answers to multiplication problems, no matter what size the numbers are. Using the calculator is one way, but they are asked to write about other methods they use, and even some new methods if they can think of any. They are to describe, in detail, the methods they use, explain why they work, and list the advantages and disadvantages of each. The students' methods include variations of repeated additions, arrays, and partial products. Maria, a new student who has just begun to speak English, explains the way she did multiplication in Mexico. Gary's group tells about the standard U.S. algorithm that they were shown at home. The class has a long discussion about why both algorithms work. The class concludes that calculators work best for most multiplication problems with large numbers. Anna notes the importance of having a ballpark estimate of the answer in mind when using a calculator because it is so easy to press the wrong key.

With the strong foundation provided by a thorough understanding of multiplication and the students' efforts to create their own procedures, the teacher decides that it is now appropriate to introduce the standard algorithm. Students are now able to appreciate its efficiency, which was especially important before calculators were available. She explains that students are welcome to use it but that they are not required to. The only requirement is that they know how to find the answer to any problem involving multiplication. She does not care what method they use and realizes that most of the time they will use a calculator. She explains that more important than method is number sense—knowing how to solve a problem, using a procedure that yields an answer, and explaining why the solution makes sense.

Professional Practices

Teachers and administrators have a professional responsibility to learn about the field of mathematics education and to create a climate for change within their school. Change involves risk-taking, is a long-term process, and takes place on multiple fronts simultaneously: curriculum materials, instructional practices, and assessment practices.

The school's faculty and administration recognize that reform of the mathematics program is a long-term process and requires a major time commitment, along with external help, for the school's faculty to grapple with issues of mathematics curriculum, instruction, and assessment.

- Teachers and administrators commit time for discussion and planning about mathematics education by the total school and/or by grade level—in the context of release time and during grade-level meetings, staff meetings, and noninstructional days.

- Teachers work with administrators to set budgeting priorities for the purchase of mathematics materials and in-service opportunities.

- Teachers observe students doing mathematics and talk about their observations.

- Teachers participate in professional development provided by the mathematics education community by attending various intensive math in-service activities such as those provided by the California Mathematics Project.

- Teachers and administrators articulate the mathematics program:
  - Within the same grade level at the school
  - Across grade levels within the school
  - With other subject areas
  - Across elementary, middle, and high school
- Teachers and administrators plan for flexible, heterogeneous grouping and the elimination of tracking to ensure equal access to the mathematics curriculum for all students.
- Individuals at the school develop realistic plans; they accept that change cannot occur all at once, but that it is important to keep moving toward long-range goals.

Time and support are provided for individual teachers to attend various workshops to learn about issues of mathematics curriculum, instruction, and assessment.

- Teachers attend:
  - District mentor teacher workshops
  - County office of education workshops
  - EQUALS seminars (see page 159)
- Teachers become actively involved in, attend, and make presentations at:
  - National Council of Teachers of Mathematics (NCTM) conferences
  - California Mathematics Council (CMC) conferences
  - Local affiliate conferences and meetings
  - California Learning Assessment System field testing of performance-based assessment tasks and workshops on evaluating student work
- Teachers subscribe and contribute to state and national mathematics publications and books, such as:
  - NCTM's *Arithmetic Teacher, Kindergarten Books, First Grade Book, Second Grade Book, Fourth Grade Book, Fifth Grade Book,* and *Sixth Grade Book.*

Teachers implement classroom practices that consistently require students to think and reason in their mathematical work. They:

- Facilitate mathematics learning by:
    - Providing ample time for students to complete work, to examine, and to revise their findings and conclusions
    - Listening to student discussions and asking questions about their thinking
    - Encouraging and accepting students' use of any approaches, strategies, and conclusions that make sense to them and that they can explain
    - Probing students' understanding and pushing them to think critically about their work
    - Organizing the classroom so that students can think and talk about their work
    - Providing a variety of resources in the room for students to use
- Attend county or district workshops on curriculum replacement units and teach the entire unit rather than selected parts
- Use performance-based assessment:
    - By observing students as they interact with materials and each other
    - By making assessment a part of ongoing student work
    - By having students create and use rubrics and standards to judge the quality of their work
    - To establish portfolios of student work, including primarily open-ended problems and investigations
    - To encourage students to revise their work
    - To look at student growth over time
    - To evaluate and revise their own classroom curricula and instruction

The school staff educate parents and the community about the mathematics program. They:

- Describe program content at:
    - Back-to-School Night
    - Open House
    - Parent-teacher-student conferences
- Invite parents and the community to program events such as Family Math and math fairs.

- Make available *The Changing Mathematics Curriculum, A Booklet for Parents.*
- Educate parents and the community about performance-based assessment.

Mathematics Resources

The following publications are available from the Bureau of Publications, Sales Unit, California Department of Education, P.O. Box 271, Sacramento, CA 95812-0271 (phone: 916-445-1260):

Everybody Counts: A Report to the Nation on the Future of Mathematics Education. Washington, D.C.: National Academy Press, 1989

The Changing Mathematics Curriculum, A Booklet for Parents, 1989

Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve, 1992

Mathematics Model Curriculum Guide, Kindergarten Through Grade Eight, 1987

A Sampler of Mathematics Assessment, 1991

Seeing Fractions, Grade 5, 1991

The following publications are available from their publishers:

Curriculum and Evaluation Standards for School Mathematics. Reston, Va: National Council of Teachers of Mathematics, 1989

Professional Standards for Teaching Mathematics. Reston, Va: National Council of Teachers of Mathematics, 1991

Reshaping School Mathematics: A Philosophy and Framework for Curriculum. Washington, D.C.: National Academy Press, 1990

The following organizations are available for additional information:

California Mathematics Project, Nicholas Branca, Director, 6475 Alvarado Road, Suite 206, San Diego, CA 92120

California Mathematics Council (CMC), Paul Giganti, President. For membership, contact Ruth Hadley, 1414 S. Wallis, Santa Maria, CA 93454; (805) 925-0774

EQUALS, Lawrence Hall of Science, University of California, Berkeley, CA 94720

National Council of Teachers of Mathematics (NCTM), 1906 Association Drive, Reston, VA 22091; (703) 620-9840

Physical Education Criterion

Focus Statement

All students participate in developmentally appropriate physical activity in a thinking, meaning-centered learning environment. The quality and productivity of each individual's life is enhanced through participation in a comprehensive, inclusive, and sequentially planned physical education program that promotes **through movement** the physical, mental, emotional, and social well-being of every individual in the pursuit of lifelong health.

The *Physical Education Framework for California Public Schools, Kindergarten Through Grade Twelve* is designed to focus on the individual's achievement and personal goals for improvement in three major areas of development. Learning experiences in the area of Goal 1: Movement Skills and Motor Knowledge help the student to become educated in the disciplines of motor learning, biomechanics, and exercise physiology/physical fitness. In the area of Goal 2: Self-Image, Self-Esteem, and Self-Realization, students participate in planned physical activities which help them to understand human growth and development and psychology. Students develop a positive self-image and achieve self-realization through these learning activities. Goal 3: Social Development and Social Interaction includes activities related to the disciplines of humanities, sociology, and historical perspectives of physical education. Students work independently and with others to develop appropriate social behavior through physical education learning experiences.

The three goals of physical education are of equal value and are synergistic. Each must be addressed at every grade level and in every aspect of the comprehensive physical education program.

Comprehensive physical education addresses all areas of the student's development and has many far-reaching benefits. Students graduating from high school should be able to plan their own lifelong fitness programs, develop their own learning plans for acquiring new motor skills, and analyze their own movement performances by applying biomechanic principles. These individuals can also explain the purpose of physical education and give a historical perspective; they understand and appreciate movement from both a personal and social perspective. They have learned the social skills necessary for leadership, teamwork, problem solving, peaceful conflict resolution, and cooperation in a group effort toward a common goal. As adults they will be able to apply their understanding of developmentally appropriate activities for themselves and others.

Quality physical education addresses a child's fundamental need for daily physical activity. Good health is basic to the quality of life . . . physical education is basic to good health.

Student Work

The physical education program provides the opportunity for students to experience and understand the learning process for acquiring motor skills.

- **Students experience a wide variety of movement skills and movement patterns.**

Movement exploration activities are the lesson for Mr. Johnson's first grade students. Isabel, Patrick, Robert, Maria, and Caleb are following directed instruction from their teacher which includes locomotor and nonlocomotor movement. Each student performs the shapes or movements given by the teacher as the student interprets. For example, when Mr. Johnson says "hop" Isabel moves forward on one foot; Caleb moves in place, alternating feet; Maria pretends to be a bunny. Mr. Johnson then says, "Balance on one body part"; Patrick sits on his buttocks with his hands and feet in the air, Robert stands on one foot, and Maria lies on her side. After completing the activity, Mr. Johnson and the class discuss what the actual terms for locomotor and nonlocomotor movement mean. Mr. Johnson demonstrates, and the students perform the terms kinesthetically for understanding. The students then see the difference between hopping (one foot) and jumping (two feet). Maria exclaims aloud suddenly, "Oh, bunnies jump, not hop!"

Mr. Samuels' third grade class has just read *Alexander and the No Good, Horrible, Very Bad Day*. In physical education the students are combining movements and creating patterns for sharing with each other. Mr. Samuels asks the students to interpret, through movement, the title of the book they just read. Theis decides that he will do this word-by-word and starts with a flexed-arm, bold walking movement pattern depicting Alexander the Great, who his parents have told him was a famous Greek. Cecily decides she will use the emotions in the title to help develop her movement patterns and begins to show agitated movement patterns. Tan likes the rhythm of the sound of the title and moves in a rhythmic pattern which shows the "movement sounds of the words." Each student has found a way to express the title in his or her own way, and they want to show each other what they have created. While he videotapes them, Mr. Samuels has the students show their creations and explain the processes they used. Each student will view the video at a later date and write about the experience in her or his journal.

- **Students experiment with a variety of learning processes to determine the best method to develop a particular skill.**

Second graders Juana and Tom are excited about attending class today, because they are going on the low balance beam. At the beginning of class, the teacher asks the students to close their eyes and picture themselves walking forward on the beam, turning around in the middle, then walking backward on the beam. The teacher assigns pairs of students to either a line or a low beam to practice. Juana and Tom take turns actually walking across the beam. Between turns they picture the activity in their minds. At the end of class, Juana and Tom share how they feel about mental practice, whether it helped them learn the skill more quickly, and name other skills for which mental practice can be used effectively. Juana felt that mental practice helped her learn the skill more quickly without being embarrassed or scared. Tom thought it helped him also, but he would rather do it instead of thinking about it.

Class begins with the teacher demonstrating juggling using three scarves. The teacher gives the fourth grade students a choice of practicing the skill on their own or staying with the teacher, who will break the skill down into smaller parts. Samara, who is mature for her age and able to concentrate on an activity alone for long periods of time, feels that she can master the skill on her own. Reuben has never seen juggling and chooses to stay with the teacher. The teacher breaks juggling down into three steps. Reuben watches the teacher demonstrate the first part of the skill, attempts the skill himself, and receives feedback from the teacher. Reuben repeats the same procedure for the second and third parts plus the combination of the steps. After several opportunities to practice the whole skill, Reuben feels that he can practice the steps at home in order to master it. At the end of the class, both Reuben and Samara have mastered juggling based on their own learning styles. For homework the teacher asks the students to list reasons why one person would learn a skill more easily using the whole-part-whole method and a second student would learn the same skill more easily using the whole method.

Mr. Solander's eighth grade physical education class is working on developing video presentations on movement patterns. The class is divided into nine groups of four. Each group has selected one movement pattern for a video presentation. John, Joan, Ricardo, and Antonia have selected the overhand throwing pattern. They read a paragraph in their textbook about their movement pattern, discuss the correct technique for the pattern, brainstorm different applications of the pattern, and plan their video. In their final product, they demonstrate and explain the overhand throwing pattern and provide examples of it by taping other physical education classes involved in different applications of an overhand throwing pattern. John remarks that watching the other students throwing helped him best understand how to apply the skill to himself. Antonia mentions that while watching someone else was a good example for her, it wasn't until she read carefully about the movement pattern that she felt that she could try it herself. Ricardo states that while it is easy for him to pick up movement skills, when he actually demonstrated the skill for someone else when making the video, he felt he thought through the process more carefully and was able to "fine tune" his skills.

- **Students are involved in physical activities for a sufficient amount of time to develop observable changes in their skill levels and movement patterns.**

Kindergartners Josh, Somia, and Antoinne are exploring different ways they can jump over and around their jump ropes. They practice turning their ropes in rhythm on one side of their body, and then have the opportunity to practice jumping rope individually. Josh discovers that the only way he can jump rope is by running and jumping simultaneously. Somia jumps rope continuously, counting out loud, and states, "I can jump rope five times in a row!" Antoinne is able to jump rope for several minutes without a mistake. Following two more weeks of practice, Josh exclaims, "Now I can jump rope in place!" Somia continues counting and jumping and is excited when she improves her old record of five jumps in a row. Antoinne is pleased that now he can jump backward. All three are looking forward to continuing to work on their rope jumping skills, knowing that the more they practice, the better they will get.

Jason and Evelyn, fifth graders, arrive at class to begin their throwing unit. Both wonder how they can spend four weeks on just the skill of throwing. Working together, they throw a variety of implements (softballs, playground balls, Frisbees, fleece balls) at a target and record their scores. The teacher then asks them to write goals which they feel they can attain by the end of four weeks. After two weeks of practice in drills and activities, Jason and Evelyn calculate their improvement and determine how close they are to meeting their individual goals. Following two more weeks of practice, Jason and Evelyn again calculate their improvement. Both are surprised to find that for each recording period, their throws were more accurate and both students exceeded their personal goals. This knowledge motivates them to continue practice throwing on their own, even though their class now moves on to kicking skills.

Seventh graders Joan and Jose are beginning a new six-week unit on golf. Jose, an experienced golfer, feels that he is too good to spend time practicing his strokes for six weeks. Joan has never golfed before and cannot imagine spending six weeks swinging a club. Both wish that the unit were much shorter. After seeing the teacher demonstrate the golf swing, Joan and Jose begin to practice as partners and take turns videotaping each other. They transfer their videotapes into a computer and save them in their own files. After three weeks, they repeat the process and compare their performances. Both are surprised to see how much they have improved; however, Jose still questions whether he will make noticeable improvement after three more weeks, while Joan is motivated and looks forward to even greater gains. At the end of the unit, they videotape each other and transfer the clips to disc. They now have portfolios of three clips of themselves golfing which they can compare. Both are excited to see that there are substantial changes between each set of images and appreciate that practice over time does, in fact, lead to improvement.

- **Students demonstrate the techniques necessary for developing competencies in movement skills and movement patterns.**

First grade students are working on improving their hopping, galloping, skipping, sliding, and jumping skills. Large posters showing each of these movement skills decorate the walls. Stacie, Gary, Kenny, and Jennifer have been listening to music and are instructed to associate different types of music with each locomotor movement. Whenever they hear the music, all four perform that movement skill in a different way (fast, slow, high, or low). The teacher rotates among the groups, providing individual feedback on the proper technique for the movement skill being practiced. Students who demonstrate the proper technique can put their names on the appropriate poster.

Jimmy, Sally, Scott, and Stephanie are working on the soccer dribble. The teacher has set up a variety of stations, so that the fourth grade students can master the correct technique for dribbling. At the first station, the group is introduced to the soccer dribble through a videotape of a model performance. They proceed to the next station, where they work in partners observing and evaluating each other using a checklist. At another station, students review the correct technique using a computerized tutorial. At the last station, students work with sixth grade students who provide them with feedback on their dribbling performances. When a student decides that he or she has mastered the soccer dribble, the student reports to the teacher, who analyzes the performance based on a six-point rubric scale.

Eighth graders Shannon, Lindsey, Frank, and Anastacio are learning new steps for line dances. The teacher has provided the group with descriptions for four new steps. Each student reads the descriptor for one step and practices it alone until he or she feels comfortable enough to teach it to the rest of the group. Each of the four students then teaches her or his new step, reviewing the descriptor when necessary to make sure she or he is using the correct technique. The group then creates their own line dance using the four steps in any sequence or combination and sets it to music.

The physical education program provides the opportunity for students to demonstrate their understanding of the principles of force and to apply these principles in physical activity.

- **Students assess fine and gross motor skills based on biomechanic principles.**

Kindergartners Teresa and Joshua are partners in a guided discovery lesson. The teacher has asked that one student in each pair find a position in which he or she is least likely to fall over (balanced). Teresa gets on her hands and knees, and Joshua draws a circle around her body parts in contact with the ground. The teacher then asks the same students to find positions in which they are likely to fall over (out of balance). Teresa stands on one foot, while Joshua draws a circle around her one body part in contact with the ground. The students then switch roles and repeat the activity. Teresa and Joshua compare the circles drawn around each of them and decide that they are more likely to fall over when they have fewer hands and feet on the floor than when they have more.

Fourth graders Billy and Jan are paired together for a reciprocal learning lesson. Each of them has a checklist which delineates the essential elements of a correct throw based on biomechanic principles. Billy throws the ball ten times while Jan observes and records those essential elements included in Billy's performance. They then switch roles and discuss with each other what is necessary to improve their respective performances. Jan notes at the bottom of her checklist that she needs to work on increasing her backswing to generate additional force, and Billy notes that he needs to practice stepping forward on his left foot as he throws, since he is right-handed. Both students choose to place the checklists in their portfolios and to repeat the assessment task again in a couple of weeks.

Eighth graders Peter, Julia, Mai, and Walter are involved in a gymnastics unit. Students have been instructed in a variety of skills on different pieces of apparatus, and the teacher has stressed the importance of applying the biomechanic principles of rotation to many of the skills. As a cooperative group of four, they now rotate to a single bar where a task card instructs them to practice pull overs. The task card delineates the role each student will play in this activity. One student practices the pull over, two students act as spotters, and the fourth student uses the camcorder to videotape the performer. The students then rotate positions until each has experienced the pull over. At the next station, they rewind and play their videotape so that they can view one another's performances and arrive at a group critique using the biomechanic principle of rotation as a basis for their analysis. The students use the group's critique the next time they have an opportunity to practice the pull over.

- **Students demonstrate motor skills and movement patterns and explain the biomechanic principles related to that movement.**

Mrs. Campbell's kindergarten class is moving to music using a variety of locomotor movements. When the music stops, Blanca balances on five body parts as indicated by the number card shown by the teacher. Blanca continues to experience balancing on different numbers of body parts. In her class discussion Blanca states, "It's easier to balance on four body parts than one because you don't tip over like when you balance on one."

Fourth graders Robin, Cliff, and Rudy have been given the task of experimenting with force. Robin and Cliff turn a long jump rope for 30 seconds while Rudy jumps. Rudy then measures and records her heart rate. Rudy suggests they do the same activity with a heavy backpack on. After she jumps with the heavy pack, she states, "Not only is my heart rate higher, but my legs ache from carrying that pack!" Robin and Cliff take their turns jumping, measuring, and recording with and without the backpack. The three students compare their results.

Seventh graders Judy, Pam, Tom, and Reuben are involved in an interdisciplinary unit on projectiles. In physical education, the students are learning racket sports. During the unit, they practice striking skills using a variety of implements, including a table tennis paddle, paddle tennis racket, badminton racket, and tennis racket. As a final project, each member of the group takes a different implement and researches the biomechanic principle for a forehand stroke. They then lead a class discussion comparing and contrasting the correct forehand stroke technique and principle for each implement.

The physical education program provides students with the opportunity to apply understanding of concepts of exercise physiology in their lifelong pursuit of mental, physical, and emotional health.

- **Students apply fitness concepts in the development of a personalized fitness plan.**

Second grade students have been asked to observe in their families, neighborhoods, or on television as many fitness activities as they can. In class, the students discuss the many activities they have observed, including jogging, bicycling, swimming, and dancing. Washington is drawing a picture of himself participating in his favorite fitness activity. The teacher then calls on each student to respond with his or her favorite fitness activity, how it makes him or her feel, and how it is good for his or her body.

Celia Howard's fourth grade students are beginning a unit on developing a personal fitness plan. To learn more about aerobic and anaerobic activities, students first participate in aerobic activities, such as jogging and jumping rope. The teacher asks what changes are happening in their bodies. Leroy and Sharice answer that their hearts beat faster and that they are breathing harder. The class then performs anaerobic activities, such as shooting baskets and throwing a ball. The teacher again asks what changes are happening in their bodies. Mycalha answers that nothing in her body has changed. However, Brett speculates that maybe his throwing arm is getting stronger. The class has a discussion about the differences between aerobic and anaerobic activities. The teacher holds up pictures of activities, and students are instructed to hold thumbs up if the activity is aerobic and thumbs down if the activity is anaerobic. In between pictures, the students discuss their answers. At the end of the lesson, students select the aerobic activities which they want to include in their fitness plans, and discuss which anaerobic activities could be included in their plans and why.

Josie is an eighth grader who is developing a fitness plan for her six-week break starting next month. Reviewing the components of health-related fitness, she plans a program in which flexibility, muscular strength, muscular endurance, and cardiovascular endurance are scheduled. Keeping in mind the results of her fitness tests and her fitness goals for the year, Josie outlines flexibility exercises for each day of the week, muscular strength exercises for three days a week, and aerobic activities for four days a week. Josie decides to change the aerobic activity each week to provide variety and to use a heart rate monitor to accurately assess whether or not she has reached her target zone. Over the six-week period, Josie monitors her progress daily and plots the data on graphs which are part of her math portfolio. At the end of six weeks, Josie assesses her program and its effect on her heart rate and body composition. She notes a significant improvement in heart rate and a slight reduction in total body fat. Finally, Josie writes a summary of her program, including not only the final data, but also her personal feelings and experiences during the six-week program.

- **Students monitor their own levels of fitness and set personal goals.**

Nicole is partnered with Pega during their morning fitness walk. These two first graders have been instructed to visually monitor each other's physical condition during the walk. The students were instructed to recognize the physical signs of vigorous exercise, i.e., huffing and puffing, sweating, slow/fast heart rate. During this walk the girls move through a progression of different walking techniques with an increasing intensity. Upon completion, Nicole and Pega cooperatively document their efforts by recording each other's participation on a class achievement chart. Both girls are especially proud of their progress toward their individual goals while participating in the schoolwide Walk Across America fitness program. They have both reached the third of five geographic goals, the Mississippi River, by winter break.

Miles is a mainstreamed sixth grade student who receives extra assistance from the school's resource specialist. His class has been studying and practicing the various methods of achieving personal fitness. For the past semester the class has been maintaining personal fitness journals. Based on a fall assessment, Miles identified two areas of need in which he is below minimal health standards. Three times a week, Miles records his accomplishments in these two target fitness goals. Periodically, Miles and his teacher review the journal to reassess his goals.

- **Students demonstrate a wide variety of safe and appropriate exercises to enhance all aspects of physical fitness.**

Second graders Enrique and Juliette are partners in a vigorous aerobic dance unit. While Mrs. Walker often models the movement patterns, today she challenges the dance partners to create a variety of safe rhythmic movement patterns. Enrique especially enjoys contributing the unique steps of his Latino cultural dances. Periodically, Mrs. Walker stops movement to discuss the elements of aerobics and its benefits. Each pair presents the aerobic dances they have created. The entire class joins in replicating the complex steps created by Enrique and Juliette. During the cool-down phase, the class discusses the values and benefits of safe, sustained aerobic activity.

As part of the investigation and experience of appropriate and safe warm-up exercises, students are assigned as pairs or individuals to observe and document adults engaging in warm-up before active play. Sixth graders Caleb and Felicia, equipped with an observation form, set out to observe and assess adults in a softball game. For 30 minutes they watch and record the warm-up activities of a local slow pitch softball team. Both children report their conclusions orally to the entire class. Caleb observed that most adults spent little if any meaningful time warming up for the observed activity. Felicia enjoyed the contrast of the few individuals that attempted to prepare safely and appropriately for movement. Each child enjoyed the unique opportunity of becoming the assessor as opposed to being assessed. After the report of the findings, the two students lead the class in appropriate alternative warm-up exercises.

The physical education program provides students with the ability to identify and select developmentally appropriate activities with respect to physical development, skill level, age, and body type.

- **Students select and participate in challenging, developmentally appropriate movement activities.**

Nisha and Gilberto, second graders, are exploring different ways they can strike a balloon using their hands. Nisha is choosing to use both hands simultaneously, while Gilberto is using a variety of ways, including the palm, wrist, and fingers. Nisha and Gilberto are then provided the opportunity to use a manipulative while reinforcing their striking skills. They are given the choice of the manipulative and the object they wish to strike. Nisha chooses to continue working with the balloon and a nylon racket, and Gilberto opts to use a fleece ball and lollipop racket.

Fifth grade students from Mr. Baker's class are engaged in a variety of throwing and catching activities using a flying disc (Frisbee). Jose and Amanda explore the different flight patterns created as they manipulate the speed and angle of the disc. Tomas and Paula are measuring their accuracy by throwing their disc at hoops of varying sizes and shapes and from different distances. Students are then given the opportunity to either participate in the team activity of Ultimate Frisbee (rules available from Frisbee Corporation) or play a round of disc golf, challenging themselves to get the lowest score possible.

Mr. Schreiber's seventh grade class is in its third week of a gymnastics unit. The class has participated in learning experiences in tumbling, parallel bars, high bar, vault, pommel, and balance beam. Each student identifies first, second, and third preferences for the events. The class is divided into heterogeneous groups according to preferred events. Each group creates a gymnastics demonstration, in which each student in the group performs an event based on his or her body type and personal fitness level. Erica, who has good upper body strength and who is visually impaired, elects to perform in tumbling and high bar. Bradley, who has speed, leg power, and upper body strength, selects pommel and vault. Lisa, who is agile, selects parallel bars and balance beam.

- **Students identify and participate in vigorous activities that stimulate growth and that improve the strength of bone, muscle, and connective tissue.**

Judy and Miguel, first graders, choose task cards with locomotor skills such as running, crawling, seal walk, hopping, and skipping written on them. They then move in that manner to the tempo of the music. With each card change students describe where they feel their muscles worked the most.

Fifth graders Truong and Lakeesha are creating an aerobics routine with their class that is designed to work all the major muscle groups of the body. After the teacher shows a muscle picture card of the calf (gastrocnemius) muscle, Truong performs "air rope jumping" while Lakeesha performs lunges. When all muscle cards have been shown and the students have explored different activities, they decide how to put the exercises together in a routine using music of their choice.

After reviewing their own performance assessments, Holly and Sonny are developing personal fitness programs based on realistic goals for improvement. Using a comprehensive set of exercises and activities which they have learned and practiced as part of their eighth grade physical education class, Holly and Sonny are working on personal exercise charts which address their specific areas of improvement. Holly and Sonny, as well as the other class members, will be held responsible for incorporating these activities into their daily exercise routines, as well as once during weekends at home.

The physical education program provides positive, success-oriented experiences in a nonthreatening environment which will result in students feeling good about themselves and feeling good about participation in movement.

- **Students participate in a variety of movement activities which offer opportunities to experience challenges, to take positive risks, and to develop the confidence to pursue personal excellence.**

Mrs. Velasquez's kindergarten students have been discovering a variety of ways in which their bodies can balance on various body parts. Working in small groups, the students are assigned to one of five balance stations. Phillip begins at the tin-can stilts station, at which he is challenged to walk on the stilts in a variety of pathways. Phillip rotates to the next station when the music stops. At this station he experiences the risk of walking on an incline beam. Phillip continues to rotate to the other three stations, which include balancing in a tripod, performing the headstand tip-up position, solving a balance puzzle on a carpet square, and balancing on balance boards.

Students in Mrs. Copez's sixth grade class are participating in the trust-building activity, Car and Driver. One student is guiding another student, whose eyes are closed, through an area of open space. Ruben is the driver for the activity, and Shawna is the car. Ruben is responsible for Shawna's well-being, and Shawna is taking a risk in trusting Ruben. Ruben and Shawna reverse the roles when the music stops. The class then participates in a discussion about the challenge of trusting others. Shawna comments, "We need to be able to trust before we challenge ourselves to take risks."

Seventh graders Rachel, George, Rick, and Marie cooperate as a team to create a tumbling routine set to music. They name themselves the

Tumble Weeds and select music for their routine. They choreograph a routine with three assigned tumbling skills and three optional tumbling skills. They practice each skill separately before combining the skills into a routine. The team rotates the roles of "tumbler" and "peer coach" in the practice session. The peer coach has a rubric to assist in assessing progress during practice and performance, to facilitate self-assessment and peer-assessment, and to facilitate the students' giving constructive feedback to each other. Routines are performed for the class, and volunteers perform at Parents' Night.

- **Students elect to participate in physical activity beyond the school setting.**

Jermaine has been learning in his second grade class the importance of being physically active when he's not at school. As homework for the next month, every day that Jermaine is physically active beyond school he brings back to school a colored paper tennis shoe with his name on it and signed by a parent. Jermaine places the tennis shoe on his second grade classroom's bar graph. At the end of the month, Jermaine and his classmates use the bar graph to discuss how often and what types of activities students participate in beyond school hours.

Pictures and drawings showing Mr. Chen's sixth grade students participating in outside physical activity decorate the walls of the classroom. Paul and Lori enter results of their extracurricular workouts into the computer's fitness log. In addition to logging on the computer, each student writes about the physical experience in his or her journal. Paul notes that he is spending more time with his family because they have been riding bicycles together. After 12 weeks of participation, Mr. Chen presents each student with a Fit for Life patch.

Seventh grader Cecelia records in her journal a day hike with her friends. The hike was an opportunity to view wildflowers, edible plants, and wildlife in Sycamore Canyon. She takes pictures and writes a report of the hike. The report is posted in class for leisure reading by other students.

- **Students express positive feelings about involvement in physical activity.**

Encouraging each other to make their hearts "happy," kindergartners Sharon and Brahim tell each other to perform vigorous activity, such as jogging in place and skipping in a circle. The class is being videotaped during this physical education activity. The students watch the tape and describe what they see that shows their hearts are happy. Brahim notices that the happier Sharon's heart gets, the bigger her smile is. Sharon notices that as Brahim's heart works harder and gets tired, his smile gets smaller.

Fourth grade students are studying influences of indigenous and other cultural groups in "California: A Changing State" in social studies (*History–Social Science Framework*, p. 46). Physical education classes give students opportunities to experience the dance of the Chumash tribe from Goleta. In small groups, students re-create the dance from written descriptions given to them by the teacher. They accept the challenge to duplicate some steps that are unfamiliar to them while reproducing the complete dance. When they feel that the new steps are awkward, they seek feedback from others in movement analysis. They revise their dance using suggestions which enhance the cultural and aesthetic quality of the dance. They now present the dance as it has been revised and are excited to have discovered authentic dance steps.

The seventh grade has been grouped into fitness teams which have worked together all year to develop fitness skills. Earlier in the year, Lonnie and Zasha's team evaluated their performances on the preassessment for the *California Health-Related Fitness Test* and set personal goals based on the published standards. Now, after the postassessment, they meet as a team to reevaluate their performances based on the goals they set. Zasha is happy that she reached her goal for the sit-and-reach test. Lonnie notices he missed his goal in pull-ups. The other team members point out that both Zasha and Lonnie made improvement over the preassessment scores. The team suggests that some goals may not have been realistic. Lonnie admits to the team that he probably was trying to meet the standards of others rather than those for himself and that he now feels good about what he did accomplish.

- **Students accept individual differences and appreciate the contributions of every participant.**

Students in McKinley Elementary School participate in a cooperative exchange program with Andrew's School for Developmentally Disabled. During a discussion Ms. Asad asks her third grade students to design physical education activities that will include the students who are in wheelchairs or use crutches. The students agree that all students can play a "regular" game of pull-the-flag, with two modifications: one, that each student in a wheelchair or with crutches has an able-bodied buddy; and two, that everyone walks instead of runs. Donyea suggests that everyone have a partner, not just the students who have to use aids to walk or move. Isaac thinks that they should all hold hands so they know who the buddies belong to and so they can help each avoid having her or his flag pulled. Ms. Asad helps her class write the game rules on the board and then has them copy the rules in their journals for reference when they explain the game to their new physical education classmates.

Fifth grade students at Alessandro Elementary School have studied immigration as an influence in U.S. history. Mr. O'Neal points out that there are 23 identified languages spoken at their school. The students want to know what countries these languages represent and wonder what kinds of physical activities children their age do in these countries. Mr. O'Neal asks many students to share their favorite physical activity from their country of origin. Several mention soccer, volleyball, tai chi, martial arts, cycling, swimming, and dancing. A few students volunteer to teach other class members the activity they mentioned. Kim Lee takes ten classmates aside to show them the tai chi that she does each morning with her family. Mohammed can hardly contain himself as he shows a group what he knows about soccer. When the class members reassemble, Mr. O'Neal asks them to discuss how other cultures may have influenced current recreational activities in California and the United States.

Sixth graders James, Alice, Ricardo, and Kisha have collaborated to research individuals who have achieved excellence in physical activity in spite of limitations or challenges, such as swimmers who are asthmatic, marathon runners who are paraplegic, and divers who are dyslexic. After they present their report to the class, each student is asked to write a journal entry related to a personal achievement in a physical activity which was difficult for him or her to learn and which required adaptations in practice sessions.

The physical education program provides students with a sense of aesthetic appreciation, individual accomplishment, and personal success through participation in movement activities.

- **Students have opportunities for culturally diverse experiences through a variety of movement activities.**

Ms. Latina's third grade students are learning sequencing in mathematics and language arts. Continuing this theme in the dance unit in physical education, the students learn folk dances that involve sequencing with progressive difficulty. An example would be Aluneilul, or the Hazelnut dance, from Romania. Students are taught the sequences of "five, three, one" step patterns and then are given an opportunity to bring them together as a whole dance to music. Kimberly, Ahmed, and Tianika agree that this is like writing paragraphs, and share this with Ms. Latina. When asked how they think this is like writing, Kimberly says, "First we learn the steps, like words, then we put them together, like sentences, and then we put the whole thing together like a paragraph."

Ms. Leeds' fourth grade students are organized into indigenous tribes when they study American Indians who lived in California. During physical education, she has the students involved in physical activities that the children of the tribes played. "Sticks" is one of those activities. Each of the four tribes has an area that is their territory to protect. As the game is played, students enter and exit other territories as they would for food gathering, etc. When the game is completed, students are asked to explain how they felt while playing the game. Sherrie, John, and Froilan express fear that they might lose their sticks. Daniel, Ignacio, Ivory, and Thania tell how they wanted to have all of the sticks, and Garrett suggests that maybe they should all share the sticks. Ms. Leeds has the students discuss how these reactions might have been real in the lives of the tribes they study and in what situations might they have had these responses.

The seventh grade physical education classes at Newmark Middle School are each selecting a folk dance to represent one of the civilizations they study in their social studies classes. Mr. Shelgren's class chooses the Ma Navu from Israel from a list he provided, which also includes dances such as Pandago from Ghana, Ersko Kolo from Serbia/Croatia, and Troika from Russia. Students learn the steps, design and create "authentic" costumes and, in an International Folk Dance Assembly, perform the dance for the rest of the school. Students are then asked to write about their performances from a personal experience as an individual and as part of a group. They are also asked to write about their progress from inception to performance and how they feel about their improvement.

- **Students establish personal and group goals for participating in creative movement.**

Les, Tina, Bill, and Reynaldo make up one of several groups assigned to create dances for the rest of Mr. Schindler's second grade class. The groups are directed to select the pace (fast, slow) and the mood (happy, sad, angry, funny) for their dances. Les's group decides their dance will be fast and happy. Each group member visualizes a series of small movements which become one or two larger segments to be connected to the other students' segments. They practice individually to formulate and memorize their fast and happy segments. Each student shares his or her segment with the group, and then the group decides the order of the segments and how to transition from one segment to the next to complete the dance. All groups then randomly select numbers for order of presentation and lead the class in their "dances."

Mr. Simplico's seventh grade physical education class has recently concluded a one-week introduction to the Tinikling portion of a folk dance unit. Using what they have learned and practiced, cooperative groups of four to six students create routines of traditional and new rhythmic dance patterns using contemporary music of each group's choice. Each group is given an opportunity to perform before their classmates. Volunteer groups are selected for additional practice and performance opportunities to be performed for local elementary schools and community groups.

- **Students have opportunities to develop aesthetic appreciation of movement as an art form.**

Ms. Mohnsen's first graders are exploring movement as an expression of how music makes them feel. Bebo, Debbie, Mark, Felicia, and Pietro are designated as "spotlight" students; they will will be the example movers for others to follow. Several different musical selections are played: "Flight of the Bumblebee," "Bolero," *Grand Canyon Suite*, "American Pie," *Sorcerer's Apprentice*. The students have been instructed to move the way the music makes them feel. Ms. Mohnsen spotlights Bebo, who is in a tucked position low to the floor. The music stops, all students tuck low to the floor, and when the music plays again, they all try to duplicate Bebo's moves and try to "feel" the emotions in Bebo's movement. When the students are asked to reflect how they felt and what emotions they experienced while performing Bebo's movement sequence, Pietro remarks, "I felt the muscles in my legs working hard!"

Mr. O'Dell's fourth grade class is jogging during the fitness segment of the physical education class. After they finish, the students are instructed to continue moving, expressing through movement how they felt about themselves while jogging and to think about that feeling. Debbie leaps and jumps around while swinging her arms wildly about. Returning to the classroom, they are instructed to make drawings about what they did and how they felt about it. Debbie draws a picture of fireworks. The students are then instructed during language arts to write in their journals what they were depicting in their drawings. Writing about joy and exhilaration, Debbie points out that while some days jogging is only hard work, today she felt that she moved as if she were a strong and beautiful dancer.

As a homework assignment, eighth grade students who attended an assembly featuring a group demonstrating rope skipping are to complete a performance critique form using specific criteria:

1. Quality of movement—posture, head position, lightness of foot
2. Symmetry of movement as a team
3. Flow and tempo of music with the rope and the jumpers

The following day students assemble at the beginning of class to discuss and share their observations and critiques. Jennifer noticed that the movement was as beautiful as a dance she'd seen at the opera house. Joshua notes how the teams worked together so all of the routines looked well planned and is surprised to learn that the teams had only been together six weeks. Students are then assigned to create their own routines in groups of five. Jennifer and her group agreed that while the members of the demonstration group seemed to easily make their routines look like works of art, it was actually very hard work.

The physical education program provides a practical laboratory which gives students the opportunity to interact effectively and positively.

- **Students are working in cooperative groups to develop motor skills and movement knowledge.**

Second graders Kenneth and Nisha discover that they are partners for the day. As Nisha practices her kicking skills, Kenneth watches and puts a smiley face on her task card when she (1) kicks the ball using the inside of her foot, (2) places the opposite foot next to the ball, and (3) runs five steps and kicks the ball. Jermaine has been selected to watch for cooperative behaviors from the pairs. To provide closure to the class, Jermaine shares his observations with his classmates.

The fifth grade class at Rio Del Mar Elementary School is working cooperatively to manipulate a large parachute into the shape of an igloo. Mason has the responsibility of taking the parachute out and putting it back when the class is finished. Sheila is a visually impaired student who has the task of listening for appropriate social skills and then recording her observations on a hand-held tape recorder. Pedro and Paula's leadership skills are utilized in different ways. Paula's strengths are in generating good ideas, identifying good ideas from others, and coordinating the large group in putting these ideas into practice. Pedro's natural enthusiasm and good humor are tapped to make sure everyone participates and to keep the class on task. The teacher encourages the class to make the igloo in several different ways. Later, students have an opportunity to discuss which physical skills and which social skills were important in completing this exercise.

Every student in Ms. Hardman's eighth grade class has a ball that will bounce and a flag tucked into side waistbands. After receiving dribbling instruction by Ms. Hardman, the students engage in Dribble Flag Pull. Students are asked to estimate how many flags they will pull during the two-minute time period, while protecting their flags at the same time. On a signal, the activity begins—students begin dribbling and pulling flags. At the end of two minutes, Dahlia tells Ramon that she did not make her goal but is willing to try again. After several challenges, time is taken to discuss strategies that may be used to protect the flag. Dahlia thinks it is too hard to dribble and pull a flag at the same time. Susie says she learned that she could dribble with either hand, and when she did she could protect her flag better and have a better chance of grabbing someone else's flag. Pamella suggests Dahlia try the activity while practicing soccer dribbling. Several other students make suggestions and encourage Dahlia to try again.

- **Students are engaged in collaborative problem-solving activities.**

The teacher presents a chart to the second grade class with the words "Working Together" at the top. The chart is divided into two columns. One column is headed "Looks Like," and the second column is headed "Sounds Like." The teacher asks the students to share what cooperation looks like and what it sounds like. Students are then divided into groups of four and assigned to a trolley, where they are supposed to walk forward and backwards as a group. Diana, Ricky, Sally, and Luis get on their trolley, thinking that this is going to be an easy task. As they begin walking, they realize that it is difficult to move unless they work together. The group goes back to the chart, reviews the important components of working together, and tries the trolley again. This time the group experiences success. At the end of class, the teacher asks the students what they consider to be most important when working together.

A sixth grade physical education class is involved in the "spider web challenge." Jennifer, Kenny, and Gary are the last three to go through the web. With only four holes left (three high ones and one low one), the whole team discusses who should go through which hole and in what order. At the end of the lesson, students write in their journals about the experience and their feelings.

Mr. Patterson's seventh grade class has been challenged to develop a comprehensive water safety unit which does not necessitate a pool or students actually getting wet. Students are instructed to be creative with their use of media, including photographs, laser disc images, drama, videotape, or any other activity of their own design. Armed with suggested resources in the community, Sydney, Cruz, Jon, and Aleta begin by interviewing Aleta's older brother, who has been a life guard for four years, and Cruz's father, who teaches scuba diving. For more information, they learn about CPR and drowning victims from the Heart Association. The group decides to use video to present the skills and information they learned to the rest of the class. Cruz's father agrees to record the underwater scenes using his underwater video camera.

- **Following instruction in appropriate social behavior, students are actively engaged in activities designed to reinforce positive social skills as individuals and as members of groups.**

Mr. Alloma's second grade students begin class by reviewing their rules for participating in physical activity, i.e., no put downs, teasing, or tattling; taking personal responsibility for staying in control; treating each other with respect. Irene and Juan are playing a partner tag game. Irene tags Juan too hard and hurts him. She apologizes. Cameron and Pater are arguing over who tagged whom first. Pauletta reminds them to play "rock, paper, scissors" to settle their dispute. At the end of the class, students discuss how positive social skills can help students to have more fun.

Mr. Bell's fourth grade class has been studying square dancing. The students start in a grand march to meet their partners. Students say hello to their partners, remind their partners of their names, and ask how their partners are doing. Beau says hello and introduces himself and asks Stacey how she is doing. Stacey reminds Beau that she is visually impaired and may need verbal prompts or a good lead to stay in the proper direction. At the end of the Right and Left Grand, Beau and Stacey say thank you and move to their next positions.

Ms. Holhmann's sixth grade class has been discussing positive reinforcement and the effect it has on learning. Students are organized in groups of three and receive cards with social skills (cooperation, good listening, etc.) listed on them. Robin, Jerry, and Juana receive a card with the word "Encouraging" at the top. The group discusses the skill and lists ways in which it can be seen or heard. The students assist one another to thoroughly understand the meaning of the skill. At the end of discussion time, the teacher, using a "numbered heads" approach, randomly calls on one student from each group to name and describe the skill. Students then begin to practice a circus skill (juggling, foot bag, pogo sticks) while simultaneously practicing the social skill. At the end of class, the groups review the cards and determine which attributes they demonstrated during the period and how they felt while being supported by their group members.

Physical education examines the ways in which movement philosophy and practices historically have affected cultural and societal development.

- **Students explain that sports, games, and physical activities reflect society at the time of their development.**

To research and report on how societal change, medical research, and technological development affect a society's choices of physical activity, Ms. Serrano's sixth grade class forms cooperative learning groups of four. In the "Race Pace" group, Mary keeps the group on task, Juan records group decisions, Lin prepares artwork for the group's report, and Margo organizes the reporting. The group meets at the library after school to research the history of short and long distance running, jumping, and throwing related to their inclusion in the Olympics, beginning with ancient Greece. Other groups research the historical development of popular activities in selected cultures: golf in Scotland, dance in Bali, jai alai in Mexico, canoeing in Polynesia. Groups present their reports to the class, using costumes, maps, artifacts, music, etc.

While discussing the cause and effect of society's changing views of women and of others in society who have had to persevere for equality and equity, the eighth grade class investigates the differences between girls basketball, "then" and "now." The class plays two 5-minute halves using girls' rules from 1953 for ball handling and court coverage, as a contrast to a previous class period when they played by modern rules. The class assembles to consider how they felt during the restricted version, and to consider how other people's expectations for us can affect our views of ourselves and, subsequently, our accomplishments. Carla's grandmother visits to share her experiences as a member of her high school basketball team which played by these rules. Seung, Carla, Farhad, and Denise give an oral report presenting the rationale given by physicians and coaches in the 1950s for having restrictive rules for women. The teacher directs the class discussion to make students aware of the changing rules and roles for women in the past 30 years and of opportunities available to girls and to boys in today's world.

- **Students explore how societal change influences the evolution of physical education.**

Part of the eighth grade research report in Ms. Hoffman's U.S. history class includes an assignment from physical education class. Students have been directed to select a person or a specific period of time on which to report. Each report is to include a segment on what activities were taught in a physical education class conducted during that time period and why students thought those activities were done. The activities would also be demonstrated by the students in their physical education class so all students could participate. James and Debbie are doing a report on Harry Truman and learn that physical education classes in the 1940s were strongly based on physical fitness because of the United States' being involved in World War II.

Professional Practices

Teachers develop a long-range plan for fully implementing the physical education program into the individual school site program. They:

- Commit time to talk about the physical education program and how to effectively teach physical education.
- Refer to the *Physical Education Framework* for guidance on short-range and long-range planning.
- Survey their colleagues to identify areas of expertise, interests, and needs in the teaching of physical education.
- Create a developmental, sequential, articulated curriculum with essential learnings for each grade level aligned with the grade level themes and inclusive of all subdisciplines.
- Set high expectations for effective instruction in the physical education department.
- Visit other physical education programs to learn ideas and to affirm what they are doing correctly.

- Plan for the inclusion of technology in their instructional delivery and assessment system.

Teachers participate in ongoing professional development. They:

- Seek long-term professional development opportunities provided by the California Physical Education Subject Matter Project.
- Seek long-term professional development in specialized areas:
  - Cooperative learning
  - Instructional technology
  - Sheltered English
  - Instructional strategies
  - Teaching and learning styles
  - Language development
- Become actively involved in, attend conferences, and make presentations at:
  - American Alliance for Health, Physical Education, Recreation, and Dance
  - California Association for Health, Physical Education, Recreation, and Dance
  - Cal Poly-SLO Summer Physical Education Workshop
  - Regional and local physical education workshops
  - Fall Physical Education Conference
- Enroll in relevant college courses to expand or refresh knowledge and skills.
- Work with mentor teachers, districts, and local physical education experts and peer coaches.
- Subscribe and contribute to national and state physical education publications, such as:
  - *CAHPERD Journal/Times*
  - *JOPERD*
  - *Journal for Teaching Physical Education*
- Connect and contribute to the California Physical Education Electronic Bulletin Board.
- Purchase California Department of Education physical education publications.

Teachers use classroom practices that enable all students to be successful. They:

- Assess students' prior knowledge and skill levels.
- Provide feedback and task opportunities to all students in an equitable manner.
- Use a variety of teaching styles based on individual learning styles.
- Use exercise as a learning opportunity.
- Use technology to enhance the learning process by providing multimedia learning experiences.

Teachers participate on interdisciplinary teams and in schoolwide restructuring efforts. They:

- Contribute to the development of schoolwide learner outcomes for the whole child.
- Become involved in the early stages of planning for restructuring.
- Participate as members of key interdisciplinary committees, such as:

  -School site councils
  -Parent-teacher clubs

Teachers, working with administrators, focus resources in planning and implementing their physical education program. They:

- Allocate funds to purchase materials for the physical education program from the general school budget, School Improvement funds, fund-raisers, the P.T.A., community resources, and grants.
- Purchase materials and equipment necessary to improve the physical education program, including sufficient supplies for all students to practice, textbooks, and software.
- Assist in the decision-making process to allocate money and release time for professional development in the area of physical education.
- Use release time to explore available grant opportunities and write grant proposals.

Teachers model and exemplify good health. They:

- Maintain active, healthy life-styles, both in and out of the school setting.
- Act as school site wellness coordinators.

Teachers educate parents and the community about physical education. They:

- Send newsletters or include information regularly in the school parent bulletin on physical education activities and benefits of physical education; provide parent groups with information on the effect of physical education on a student's education.
- Invite parents to attend and participate in physical education activities, such as Parent Nights.

Teachers use a variety of performance-based assessment techniques to assess students and the program. They:

- Become familiar, along with the administration, with performance-based assessment tools for physical education, such as student portfolios, rubrics, open-ended problems, journals, and student projects and performances.
- Base assessment and grades on essential learnings for the grade level.
- Encourage students to assess their own work and conceptual understanding.
- Assess students individually and in groups.
- Give students short-term and long-term projects in which they construct, perform, and produce.
- Use results to monitor student growth over time and to modify their own instruction.
- Develop electronic student portfolios which include video clips of motor skills.

Physical Education Resources

The following publications are available from the Bureau of Publications, Sales Unit, California Department of Education, P.O. Box 271, Sacramento, CA 95812-0271; (916) 445-1260:

Physical Education Framework for California Public Schools, Kindergarten Through Grade Twelve, 1994.

Physical Education Model Curriculum Standards, Grades Nine Through Twelve, 1991.

Physical Education for Individuals with Exceptional Needs: A Resource Manual, 1986.

The following organizations offer additional information:

American Heart Association. (Check local telephone listings for local chapters.)

California Association for Health, Physical Education, Recreation and Dance (CAHPERD), 1501 El Camino Avenue, Suite 3, Sacramento, CA 95815-2742; (916) 922-3596.

Council on Physical Education for Children (COPEC), American Alliance for Health, Physical Education, Recreation and Dance, 1900 Association Drive, Reston, VA 99091.

Dairy Council of California, 1101 West National Drive, Suite B, Sacramento, CA 95834; (916) 263-3560.

Healthy Kids Resource Center, 313 West Winton Avenue, Room 180, Hayward, CA 94544; (510) 670-4581.

National Association of Sports and Physical Education (NASPE), American Alliance for Health, Physical Education, Recreation and Dance, 1900 Association Drive, Reston, VA 99091.

Science Criterion

Focus Statement

All students participate fully in an activity-based program of natural sciences and applied technologies. The science curriculum is designed to concentrate on the "big ideas" that comprise the paradigms of science. The program emphasizes the meaning and connections of science. The *Science Framework for California Public Schools, Kindergarten Through Grade Twelve* stresses that "less is more." Reflecting this, no more than eight major concepts are addressed each year. Themes are used to connect these fundamental concepts. Six themes are identified in the *Framework:* Systems and Interactions, Scale and Structure, Patterns of Change, Stability, Energy, and Evolution. Since the use of themes is analogous to themes in literature and history, interdisciplinary curricula can be developed to treat two or more subjects concurrently, without losing discipline-specific rigor.

The science curriculum is designed with students' interests and experiences in mind. Since science and its technological applications are evident in every aspect of our world, the curriculum is replete with investigations that engage all learners in the classroom. A curriculum that focuses on a few ideas, deeply understood, is composed of many activities that are conducted in a meaningful context and make students care about the results and the meaning of the concept. As students construct their own meaning, they take greater responsibility for developing their own conceptual models. The student's enthusiasm and natural curiosity acts as a springboard for further investigations, allowing for more in-depth study. Students are encouraged to grapple with the ideas, issues, and interests that make up our contemporary understanding of science and technology. Among the most important intents of the science curriculum is the lasting interest in and motivation for future success in the sciences for all students.

In science, students' work emphasizes deeply understanding a small number of key concepts through a variety of experiences and the use of multimedia resources. Students' work shows many examples of investigations which address fundamental ideas in science. Many samples of work are investigations undertaken by groups of students whose roles are identified and whose membership changes from project to project. The work is balanced among the three branches of science—earth, life, and physical—and there is a strong showing of technology projects that reveal a thorough understanding of the use of appropriate technologies to explore science principles. Much of the project work takes days or weeks to complete.

It takes time for students to make connections, and it also takes time for teachers to learn how to help students make connections. Assessment of students' understanding must be woven throughout, and embedded within, all parts of the instructional program. Since understanding by all students is a primary goal, the curriculum is designed not to rush through a concept to say that it has been "covered." In fact, the opportunity to reteach and use multiple examples is necessary to promote more complete understanding by students. The idea that "less is more" is precisely what this practice entails—to teach more means to teach fewer ideas more completely.

Student Work

The science program is designed so that students construct important ideas of science through inquiry and investigation.

- **Students construct their own models of the world by learning concepts based on their prior understandings.**

  Before beginning an astronomy unit, second grade students think, write down, and then share with a partner their notions about how old the earth is and how they learned that information. They turn in their lists to the teacher, who takes notes as the discussion occurs. He uses these data as a basis for adapting his course of study of the earth to correct any misunderstandings that might have appeared. Nicole thinks that the earth is 100 million years old, because 100 million is a big number. Anthony thinks the earth is as old as his great-grandfather because his great-grandfather is the oldest thing he knows. The teacher realizes that the idea of scale is important to present to his students, and he involves them in preparing a geologic time line onto which the students' estimates about the age of the earth along with the generally acknowledged age of the earth are placed.

  Maria's sixth grade class is investigating air pressure, and for several days they record in journals their individual thoughts on this topic. The teacher describes an experiment and asks students for predictions about the results. He then conducts the experiment. He places a hard-boiled egg on the mouth of a glass baby bottle, demonstrating that the egg will not slide into the bottle easily. The teacher lifts up the egg, inserts a burning paper into the bottle, and immediately replaces the egg. The students observe as the fire is extinguished that the egg goes into the bottle. When questioned by the teacher, most students say the egg was sucked into the bottle, with little or no explanation of the reason. Based on this information, the teacher then decides to teach the concept that when gas cools, it contracts and forms a minivacuum. This will enable students to apply previous experience to better understand the idea that greater pressure above the minivacuum pushes the egg in. Students are finally asked to record for assessment purposes any revisions to their understanding of air pressure in their journals.

In order to construct the idea that the earth is constantly changing, seventh grade students share their perceptions and generate questions about why these changes have occurred. To answer their questions and to dispel myths, the students study patterns of change in rocks and soils as well as topographical maps. They design and perform investigations on rocks and soil that address how weather and evolution have affected the earth's changes throughout history. In the process, students construct for themselves the concept that the earth has changed in the past and will change in the future, that these same forces will affect the changes, and that the earth itself serves as a recorder of change. They use a variety of media in preparing their reports, which are recorded and saved as part of the embedded assessment system.

- **Students have opportunities to develop a deeper understanding of fewer concepts spread over a longer period of time, and their work shows evidence of cumulative acquisition of science concepts which are revisited over the course of several years.**

In the primary grades, Shari investigated matter and its properties. As a kindergartner, she practiced observation skills by describing things around her and then comparing and categorizing them by simple characteristics. In first grade, Shari began to formally describe the properties of the things around her, both by observable characteristics and by their behaviors. She was fascinated by the things which sank or floated, and she also spent a lot of time trying to find one more object smaller than the smallest one found before. After second grade, where she learned about evaporation, freezing, and melting, she could more easily understand the water cycle and weather reports on television. She wondered if other liquids, besides water, could evaporate or freeze. Because she had studied properties of matter several times in the primary grades, the chemistry lessons in the fifth grade were much easier for her to comprehend.

In the third grade, Johnnie learned about the four layers of the earth. In the fourth grade, he learned about fossils and drilling for oil. In fifth grade, he learned about earthquakes. However, the teachers tied each of the new topics to the previous ones, to help him get a deeper understanding of his world. When he learned about the layers of the earth, he also learned how deep the "soil layer" and rock layer are, as well as the depth of the crust. He learned that each of the layers had its own characteristics. In the fossils unit, he learned that oil was basically produced from the remains of animals and plants from long ago and that these are concentrated only in certain areas. By viewing a video tape of an ITV program, he also learned that the process of finding oil can be helped by dynamiting and "listening" to the sound waves generated in the different layers since each layer produces its own type of recording. During the earthquake unit, he learned that the seismographs were the instruments to determine the exact depth and nature of the rock layers.

During preactivity assessment of their concepts of natural balance, eighth graders share several concepts they learned in earlier grades. Their responses are accurate and rich with details. Angela describes predator-prey relationships and how predators help regulate the population of the prey and prevent it from overburdening its resources. In sixth grade, Andrew learned about climax communities—that they are not static, but will change rapidly if there are major shifts in the environment. During sixth grade, Esmeralda's class worked on eco-projects such as role-playing a Board of Supervisors' meeting to determine the best location for a toxic waste site, collecting long-term data on their chosen transect on campus, and writing an environmental impact report on the proposal for a new factory in their town. In seventh grade, during the unit on adaptations, Jose studied several examples of natural selection, including the peppered moth of England. Students are able to categorize many concepts associated with the large idea of ecological balance because their understanding was facilitated by repeated lessons over many years.

- **Students are engaged in discussions and activities which reveal their preconceptions and help dispel myths.**

After a severe electrical storm, the first grade class is discussing thunder and lightning. The teacher shares the story that his mother used to tell him about thunder. She had explained that the angels were just going bowling for the night. When someone hit a strike, that would cause the sky to light up. He then has his students share some of their stories. He explains how stories are often used to alleviate fear of the unknown and help people to understand the world around them, but when we gain new information, our explanations must be changed. He finally asks students to share aloud things which they once thought to be true but about which they changed their opinions when they learned a little more about them.

After a study of the arctic region, second grader Lenda observes an ice cube melting in a large glass at home as she plays with it with her straw. She watches as the ice cube turns over several times during the melting process. At school, she asks her teacher if icebergs flip over the same way as ice cubes do, because of course she cannot see that a significant part of the iceberg is under water. The class has many ideas which they offer to answer the question, but most are understandably naive. The teacher takes the time to write Lenda's question on a piece of chart paper, then records each of the predicted answers beneath it. She next encourages members of the class to do an extra credit investigation at home, because there is not enough time to do it in class. She leads them in a short discussion designed to generate possible procedures. In addition to the ideas suggested by students, the teacher also suggests that someone might be interested in building a model of an iceberg in an ocean and watching what it does when placed in different volumes of water. When Lenda asks what she means, the teacher explains that she could make a big ice cube in a milk carton and then observe it in her bathtub and in a sink. Students are encouraged to present their findings to the class, because part of being a good investigator is also being able to communicate effectively.

Fourth grade students are shown a series of slides illustrating layering in the earth's crust. The photographs range from simple horizontal layers to dramatically folded cross sections. The teacher pauses at each picture to discuss students' observations and to listen to their proposed explanations for how these things came to be. Before moving on to the next photograph, the teacher always makes sure that students have discussed the concept of relative dating (though not necessarily presenting the idea in those terms). He accepts all students' responses, neither validating nor negating them. At the end of the slide show, the teacher shows an enlarged photograph of a simple cross section. He asks the class to quickly summarize the key points of their earlier discussion and records their preconceptions under the picture. He repeats the procedure with two other photographs, then explains that the class is about to begin some investigations which will help to show which, if any, of the class predictions are accurate and useful in understanding issues about the history of the earth.

An eighth grade class has been studying reproduction and has completed several activities on genetics. The teacher wants to introduce sex-linked characteristics next, so she asks the students, "What causes color blindness?" The responses vary from "My mom says you get it if you don't eat enough carrots" to "If you don't wear sunglasses in bright sunlight, you'll burn out your color vision cells." She then asks, "Do you think it could be a genetic trait like eye color or the other traits we've studied?" A unanimous NO is the response. She continues the discussion by showing a diagram of the pedigree of color blindness in a family. The students are surprised to learn this trait is evident in a male offspring but not in his two parents. "Can you explain how this might happen? Think about it overnight, and we'll continue this discussion tomorrow," says the teacher. "Remember, males have an X and Y chromosome and females have two Xs." The lesson on recessive sex-linked characteristics continues the following day, and students have a chance to change their original understandings. They are asked to record in their journals their new understandings and how their personal understandings may have changed. The teacher and children provide assistance to students whose primary languages are other than English so that they can record their thoughts using as much English as possible as well as in their primary language.

- **Since the nature of science is open to controversy and is non-dogmatic, students understand how we come to know and how we come to revise our thinking when presented with new evidence as they experiment with open-ended investigations.**

A fifth grade class begins its investigation of surface tension by examining the properties of bubbles. After providing time for students to blow bubbles and become familiar with the bubble solution (and the procedures for cleaning up their mess), the teacher calls them together around a table filled with assorted objects he had earlier asked them to bring from home—rings of various sizes, pieces of pipe, flour sifters, cardboard tubes, handles, and the like. The teacher challenges pairs of students to find the objects (or combination of objects) which will blow the largest, the smallest, and the longest-lasting bubbles. Knowing that the class has not had much experience with open-ended investigations, he requires that they keep records of all materials they use and the results of their investigation, but he does not require them to record their hypotheses—he recognizes that students will make many informal hypotheses as they decide which items to select and will test, accept, and/or reject those hypotheses based on their informal testing. When finished, teams share the results of their tests. Finally, students are asked to identify similar characteristics of the different bubble makers in preparation for the next investigation.

A sixth grade class is investigating the physical properties of matter. Students had previously separated salt and water by boiling the water. Now the teacher asks students to recall their experiences with boiling water and to explain, as best they can, what they think happens as it is boiling. The teacher asks, "What do you think will happen to the temperature of the water while it is boiling?" While the students are sharing their responses, the teacher fills a beaker with a measured amount of water, sets up a Bunsen burner, and places a thermometer in the beaker. After recording their predictions, the teacher instructs the class to watch the water boil and to record all data (time, temperature, volume, and behavior) while it is boiling. The class is surprised by the discrepancy between their predictions and the fact that the temperature of the water remained constant during boiling. After a discussion in which students' preconceptions are shown to be erroneous by the experimental results, students are challenged to design tests to look for similarities and differences in the process of boiling other liquids.

Seventh grade students work with a light-box, experimenting with red, blue, and green filters. Using mirrors, the groups' members discover what happens when two or more colors of light are combined. The groups share ways of reflecting light and the results of their investigations. A classroom bulletin board is used to illustrate the various groups' reports from several light-box experiments.

Eighth grade students are shown pictures of several mammals, including a rhinoceros, a large anteater, and a walrus. They are asked to identify the one they think is most closely related to the elephant and to provide an explanation for their classification. The teacher, having identified students' preconceptions, suggests that groups conduct some research to see which mammal actually possesses the most shared, derived characteristics with the elephant. Research is not limited to textbooks and reference books; students also use a CD-ROM on mammals and selected hypermedia resources. Groups report on the similarities and differences they found in their research. Students then adjust their predictions to reflect the things they discovered in their research and write questions they still have after their research.

- **Students have multiple opportunities for active, engaged learning while investigating questions about the world around them.**

After watching a television program and seeing the effects of the oil spill in Alaska and the chemical contamination caused by the derailment of a train in California, third grade students want to know why all the animals are dying and ask why science does not know how to stop all the bad effects. The teacher uses this natural concern for extended learning. Students design experiments which show the effects of dilution (chemicals in lake water), and demonstrate the immiscibility of oil and water, including the effects of oil on animals' fur and feathers. A camcorder is used to record the students' investigations, and the tape is stored as part of the cumulative class assessment system.

Students in a fifth grade class are asked to share their prior understanding about what a plant needs in order to grow. After gathering information about the subject and selecting a single variable, the students design and carry out an investigation. Students discuss their results in light of their predictions. After answering the question "What did we learn from these experiments?", the students design an activity which will validate their findings and explain how their understanding changed as a result of the investigation.

Seventh grade students, after learning about earthquakes and tsunamis, read the books *The Big Wave* by Pearl S. Buck and *The Magic Fan* by Keith Baker. The group decides that they would like to learn more about the different types of bridges and bridge building. They check out the appropriate books from the library, view several laser discs about bridges, and contact the Army Corps of Engineers. Using the information they have gained, they construct several miniature bridges which they hope will be the strongest bridges in the world. After testing each version, the students discuss what went right and what went wrong and then move on to building a better bridge. They are satisfied after their fifth bridge is built, because it withstands all the strength tests they have devised.

- **All students see themselves as scientific investigators of the world around them and sometimes have questions that cannot be fully answered.**

Third grade students, working in groups of four, are attempting to answer the question "What influences whether the stems of a plant grow up and the roots grow down?" They have small, potted lima bean plants and access to a supply closet containing a variety of everyday materials such as waxed paper, tape, and toothpicks. The teacher's directions include only that they can use any materials to devise an investigation that will provide an answer to the question. This is planned to be a long-term investigation. Daily for several weeks, at the beginning of science period, they are given time to observe and record any changes to the plant caused by manipulation of their experiment. Group roles include: artist (who draws what is happening to the plant), grapher (who collects data and graphs the data on a computer), recorder (who writes the lab report for the group), and gardener/waterer (who waters the plant). In addition to their investigations, students view time-lapse photography of growing plants (either on videotape or laser disc). The results of the students' investigations are posted around the room.

A fourth grade class from the inner city spends the morning at the beach investigating tide pools. Pairs of students have clipboards with a sheet of teacher-prepared questions for them to answer. He spent a great deal of time developing questions which would invite the teams to use observational skills in order to see relationships between many different types of organisms and microhabitats. The day goes smoothly, but on the way back to school, the teacher is a little surprised by the nature of the students' conversations. It turns out that more than half of them had never been to the ocean. Rather than talking about what they had done and discovered, they buzz with questions (and proposed explanations): "How come the ocean is so big?" "Why is the water salty?" "Where does all the sand come from?" "What causes the waves?" The next morning in class, the teacher honors the students' questions and provides some time for them to pursue the ideas in which they are interested. In the period usually reserved for language arts (which typically requires a lot of speaking and writing), the class restates their questions, and each is written on a piece of chart paper. Hypotheses are added to those questions which students feel they could explain. Students discuss, in general terms, how each question might be investigated. Those which the class agrees might be too difficult are crossed off the list (though a couple remain for which students agree that they could do some reading). Students are then allowed to select a question to investigate. They write a more detailed plan for investigation. Most students use the ideas already identified, but two students outline a completely original procedure. As the children work, the teacher circulates among the groups and offers suggestions to those who are stuck. Once the tide pool activities are completed in science period, the students are able to continue their investigations and reports during two periods, and a few groups choose to do some of the work outside of school. When the entire process winds down and all the reports are given, a few questions still remain and many new questions emerge. The teacher writes those questions on the board and offers their investigations as a source for extra credit points, then moves back to a more regular schedule.

A few sixth graders are reading and discussing *50 Simple Things You Can Do to Save the Earth* and are curious about compost piles. How do they work? What goes into them? Are they hard to start? They go to the library media center to check other sources of information about compost piles. They decide they would like to build their own. The students receive permission from the principal after writing her several persuasive letters, following the advice of the teacher.

- **Students have opportunities to use their skills of observing, communicating, comparing, ordering, categorizing, relating, inferring, and applying when developmentally appropriate.**

In a unit on natural selection, first graders measure themselves in relation to the dinosaurs they have studied. The students measure themselves (height, weight, and foot size) and compare themselves to their favorite dinosaur. The students estimate how many "Lisas" or "Guillermos" it would take to be the same height, length, and weight. The students then find the similarities and differences between themselves and their favorite dinosaur.

Marta's fifth grade class observes salt crystals forming in a pie plate on the overhead projector. They discuss their observations of the salt crystals, then predict what might happen to other solids placed in a heated solution. Groups of students then test a variety of other translucent crystals (sugar, alum, and the like), and report their findings to the class. Each group constructs models of the crystals which are formed, then the class compares and groups them by similarities.

Eighth grade students can identify which pen was used to write a mystery valentine by carrying out chromatography experiments. They are given opportunities and ample time to apply their understandings about separation of mixtures and to make inferences about the identity of the pen when their lab work is complete.

- **Students work together in collaborative groups, searching for solutions to given or selected problems with little outside help and with few parameters.**

A kindergarten class is given its first group task of the year: sort a small bag of mixed buttons by a category of their choosing. Indira has the task of going to the station to get the bag of buttons. Jesse is responsible for taking the buttons out of the bag and then returning them when the group is done. Paula has the task of listening to the different ideas for sorting the buttons and actually moving them around, but she has a hard time keeping the other kids from touching the buttons and kindly allows them at least one turn each. Roberto will report his group's favorite sorting rule when everyone is finished. While they work, the teacher and the teacher's aide move from group to group asking the children to describe and show their favorite method for sorting the buttons. They help the children draw a picture of this method and to write a dictation sentence which describes their rule. After every group is finished and all the materials are returned to the storage area, each reporter shows her or his group's picture and explains what they decided. Roberto reports in Spanish, while the aide reads the sentence in English to the class, noting how the picture makes the language differences irrelevant because everyone worked with the same materials and the rule is self-evident in the picture.

Scott is a mainstreamed sixth grade student who receives extra assistance from the school's resource specialist program. His class has been studying various conditions within a habitat area which might affect the behavior of animals. One project that several groups (including his own) have been working on involves the use of several fish aquariums which students brought from home. The groups are working cooperatively while they manipulate and report on the effects of several variables on the fish habitat (amount of light and dark; plants, no plants, and different types of plants; aeration and reduced aeration; and the like). Though Scott is not a particularly strong writer, his artistic talents are recognized as among the best in the class. In fact, the teacher has made sure every group has at least one strong artist and has placed an unusual amount of emphasis on illustrations in the science projects assigned throughout the year. Miguel is in Scott's group. Miguel's Spanish is stronger than his English, he is patient with Scott, and he listens to the suggestions of Paulette, who is verbal and dramatic . Cyndi, the last member of Scott's group, keeps the group on task and enthusiastically working as a team. The four of them together compose a short written report with artwork and present a dynamic oral report to the class on the effect of various conditions on the fish habitat.

The seventh grade class uses images of the planets and their moons to complete a report comparing conditions or features they see in the photographs to those seen on Earth. The materials they work with are available from the library media center—slides, filmstrips, photographs, and laser disc images. Groups of students are free to select the planets and conditions on which they wish to focus their attention. Similarly, they are free to choose the method by which they share the results of their investigations. Depending on the strengths of members within each collaborative group, students report with posters, videotape and photographic essays, hypermedia products, an activity of their own design in which members of other groups participate, and traditional reports. Acceptance of multimedia presentations by the teacher is one way the entire class participates fully in this learning experience.

- **Students use a variety of instructional materials, including lab equipment, reference books, trade books, and relevant educational technology, to facilitate active learning and construction of new knowledge.**

Second grade students studying geology simulate the structure of rocks by making chocolate chip cookies from a variety of ingredients. Using toothpicks and hand lenses, students examine the particles making up their chocolate chip "rocks," then compare them to the composition of real rocks. Students next take simulated core samples from a cupcake made of various layers, then attempt to draw a cross section of the inside of their cupcake. With this information, students make a clay model of the earth's three main layers. Understanding is reinforced by watching commercially available laser discs showing the earth in cross section.

As part of a computer project in their own classroom, sixth grade students design and create for the fourth grade a database containing information about the typical flora and fauna of a Sierra Nevada yellow pine forest. In their study of ecosystems, the fourth grade class is challenged to take on various roles in regard to the use of that yellow pine forest—some are to file an environmental impact report concerning the logging of black oak within the forest, others are considering the possibility of placing a bounty on mountain lions, and the like. Students use the database to find relationships between various organisms, conduct more traditional research in trade and reference books, and seek information from resources within the community. Students simulate a town-hall meeting as they make their reports to the class and decide what is to be done with the forest's ecosystem.

Eighth grade students use microcomputer-based laboratory materials, temperature probes, light probes, and heat pulsars for the collection of data necessary to explore concepts in heat and light. Instead of learning from a textbook or from a teacher's lecture how heat differs from temperature, students use the tools to collect, display, and analyze data, freeing them from the tedious mechanics of observing water cooling, calling out times and temperatures, and so forth. Students are able to concentrate on the effect of the experimental action, readily compare results with fellow students, repeat experiments easily, if necessary, and in general, acquire more readily the underlying concepts of heat and temperature.

The program is designed so that students understand that science is connected to the real world.

- **Students' investigations of the natural world are relevant and presented in a meaningful context.**

Every member of Serina's first grade class has chosen a plant to be his/her own for the year. Each week, the students spend five minutes recording their observations of what they see, sometimes by drawing. They try to identify each others' plants by what they record. So far, no one has guessed Serina's peach tree seedling. The teacher suggests that she use more detail when describing her plant, since the idea was to have her classmates guess the plant.

The water system at Elizabeth's rural school has undergone some difficulties. Because of drought, the water table dropped and the school had to drill a new well. Unfortunately, the water now tastes slightly sulfurous. Everyone is upset. The topic of water is hot and discussed daily in her fifth grade class. One morning, Richard comes to school and describes a "mess" he saw in a part of the creek near his house. The mess, it turns out, was caused by people using the creek as a dump site. In addition, there seems to be some severe erosion in or near the creek at this site. The class instantly concludes that "Richard's Mess" (as it comes to be called) is the cause for the water problems at school. Rather than *tell* the class that the problems with the surface water away from the school are not related to the problems with the well at the school, the teacher uses this opportunity to investigate a real-life problem related to the earth science unit currently being studied. After doing some research, investigating concepts such as percolation in relation to collected soil samples from near the creek and the school, learning about the layers of rock beneath the school grounds, and the like, Elizabeth and her class finally come to the conclusion that there is no relationship between the dump site and the water problems at school. However, they learned a lot about erosion and stream habitats, and—as a community service project— they decide to clean up the mess in the creek.

The eighth grade students in Benji's class are actively involved in a series of physics lessons involving the motion of their bicycles and roller blades. For example, Benji's group is trying to decide which student on which bike can get from point A to point B in the least amount of time (or whether it makes any difference at all). Bikes are brought from home, the students use stopwatches provided by the teacher, and they enter all data collected in the tests at the class computer. The field investigations are supported in the classroom by the use of models (marbles, toy cars, and the like). Some of the field investigations seem pointless to the teacher, but she allows the students to conduct them anyway. After all investigations are completed and the reports made, the class decides it wishes to publish its findings in a picture book, which it writes for the third grade class in a feeder school that is also studying motion.

- **Students make connections between science concepts taught in the classroom and natural phenomena in their lives in order to create a deeper level of conceptual understanding.**

Before studying rocks in the class, kindergarten students bring in rocks from their yards and neighborhoods to share with the rest of the class and to ask their teacher questions about the rocks they have found. They ask the teacher questions such as "Why are rocks hard?", "Where do rocks come from?", "Why are rocks different colors?" The teacher records these questions and later uses them to help make choices regarding the focus he wants to give to the lessons planned for the unit.

After surviving the Loma Prieta earthquake, many fourth grade students in Santa Cruz wonder why earthquakes cannot be predicted. They are naturally curious and motivated to learn more. The teacher asks them to do further investigations on earth movements and to build their own seismograph. The activities are placed in the context of a bigger concept taught in the classroom: different forms of energy reshape products of the earth. The unit ends with a field trip to the United States Geological Survey station in nearby Hollister.

In their unit on adaptations and changing environment, seventh graders study how human habitation has changed the environment. To connect these lessons to their real world, the teacher takes the class on a walking field trip to nearby vacant lots gone to seed. The students record descriptions of plants and animals in their journals as they do population counts in their transects. They are also asked to list the differences between the vacant lots and the blocks where their school is located. What would the entire city look like if there were no buildings, no roads, no humans? What different organisms might be living in this location instead? Students now, after "living" in a vacant lot for a class period, can more readily comprehend the changes caused by human habitation. Indira tells about a book she read to her little brother entitled *Urban Roosts*, by Barbara Bash. It tells how some birds now have to find homes in the eaves of buildings, on rooftops, and under bridges instead of in trees. Humans have really changed the environment, she realizes.

- **Because themes are used to connect ideas within and across the disciplines of science, students find learning more meaningful and relevant.**

Three concepts are taught during the course of the second grade at Juanita's school: living things have structures to meet their needs, matter has properties by which it can be described, and different forms of energy reshape products of the earth. As Juanita conducts her investigations, she begins to notice that everything is made up of smaller things because her teacher, using the theme of Scale and Structure, keeps directing everyone's attention to observation at different "scales" (especially size and time). At these different scales, it becomes apparent that plants, animals, matter, and rocks also possess different structures. Understanding these structures makes it easier to understand much more about the things themselves.

Fourth grade students first use a stream table to observe the effects of running water, and then they observe the effects of melting ice on a sand hill. They then build a sand castle and observe what happens as it dries out. During each activity, they closely examine the interacting systems responsible for the observed changes. Time is spent identifying systems at different levels. They read the book *The Sun, the Wind, and the Rain,* by Lisa Westberg Peters. After these activities, which reflect the theme of Systems and Interactions, the students are able to tell, for inclusion in their science portfolios, the "story" of erosional forces and the effects they have on the landscape. They also can explain that water, in its various forms, interacts with the landscape in different ways.

In an earth science unit, seventh grade students are introduced to the theory of plate tectonics. It is provided as an explanation for different types of information they have collected in various activities (similar unusual geologic features found in different parts of the world, the location of fault zones and volcanic ranges they have mapped, and so on). In a previous physical science unit on insulation and conduction, they learned about the transfer of heat energy by conduction, convection, and radiation. Floating some material on the surface of a large container of heated water, they are now able to apply their understanding of convection currents to motions of the earth's plates. They also better understand the concept of energy transfer and its effect on materials within the earth's crust. They return later to the idea of convection currents while studying the motion of birds, kites, and clouds.

Ky's eighth grade class starts the year by designing and making simple steam engines to drive a gear (or gears) which move various objects for different purposes. His written report about the device is not very well done, but Ky's demonstration before the class clearly shows his understanding of the major concepts which had been taught. The teacher videotapes all presentations in order to have a permanent record. Later in the year, Ky works with a group that chooses to do a computer simulation of conditions within a cumulonimbus cloud, a topic that is sparked by disagreement over what causes lightning. The model that the group makes is closely related to studies done by other groups to show many of the energy transformations present in a variety of weather conditions. For his final project at the end of the school year, Ky chooses to follow the path of a berry from germination to decomposition, keeping track of the different forms of energy present at various stages in the berry's life cycle. Being well versed in the use of technology, he chooses to present his findings through the use of hypermedia. When the school year comes to an end, Ky's final assessment consists of nothing more than one question: "What have you learned about the transformation of energy during the course of this year?"

- **Students integrate science with other curricular areas.**

A third grade class is studying weather throughout the school year. They begin in the fall with a mini-unit on instrumentation, which includes building several weather instruments and collecting daily weather information. With the fourth grade class, they watch several episodes of an instructional television program which includes information on weather instrumentation. In conjunction with these preliminary investigations, students also make a solar water collector, test the evaporation rate of different amounts of water, and make closed terrariums to enrich their understanding of the water cycle. In addition, they read *The Magic School Bus: At the Waterworks* (Joanna Cole, Scholastic, 1986), learn how to make wet-on-wet watercolor clouds, and write cinquain poetry about water, wind, and clouds. For most of the rest of the year, the class studies other topics of interest, but they continue to collect weather data on a daily basis. When the class returns to the weather unit in the spring, they have accumulated a lot of information. "But is the weather here the same in other parts of the state?" Abel wants to know. "Good thing you asked!" replies the teacher, who had hoped just such a question would arise. She had earlier arranged (and practiced) exchanging data over a modem with a friend in the southern part of the state. It is not a difficult task to convince the class to try it themselves, and before long they are looking for similarities and differences in the weather patterns at the two locations, closely examining weather maps (and physical relief maps) of the two regions, and writing lots of letters back and forth with their new pen pals. The project is so successful, that the teacher talks the fourth grade teacher into participating the following school year in a network that allows students to exchange data and conversation.

Using trade books, reference materials, and laser discs, sixth grade students conduct research on the adaptations of a wide range of plants and animals. Specifically, they are trying to determine whether they can predict the type of habitat in which an organism would most likely be found if they knew something about its physical and behavioral characteristics. Once they seem to know a lot about organisms and adaptation to habitats, their teacher turns their question inside out—if they know something about an area's environmental conditions, could they predict the types of organisms most likely to be found there? The teacher assigns an interesting assortment of world habitats to each group, closely related to regions of the world in which ancient civilizations or early human settlements appeared. Geographic and geologic influences on habitat require additional sources for information as students soon discover that little reference material on these areas is in their library. Specialized maps (rainfall, climate, temperature, vegetation, natural resources, and the like) become useful interpretive tools to help them more clearly define the environmental conditions in their area. Students write reports, make maps, and write stories about their regions of study. The art teacher helps them collect photographs and other visual images, shows them how to sketch and enlarge a landscape painting of their region, and finally assists them as they make poster paint murals on panels of butcher paper. Having predicted the types of organisms they feel might live in their regions, students now attempt to verify their hypotheses with research. Pictures and photographs are made to scale of real organisms which inhabit their areas, and these are placed on the murals. The teacher makes a videotape of the students' reports about their murals. Now, the computer teacher plans to show the students how to scan some of the pictures they created and to make hypermedia stacks of the regions they studied.

A group of eighth graders working on an interdisciplinary unit covering language arts, math, social studies, and science is studying wildlife in the Sacramento River basin. Students write letters to individuals representing state and federal agencies related to wildlife management and invite many to visit the class to speak. They learn about indicator species and attempt, given the limited resources available on the subject, to reconstruct the historic population cycles of those species. They draw maps, store collected data in a database, and make graphs from the data. They visit several sites close to their school and make population counts of their own. Insofar as is possible, they correlate changes in their study group to changes in population and settlement patterns in the area during historic times. The unit concludes with an assessment simulation of a town planning meeting in which students play—after appropriate research—the parts of various individuals and members of the groups interested in the development of a local shopping mall along the river.

- **Students' work represents a balanced treatment of each discipline each year.**

Sonja's second grade class studies warmth and heat energy, observing that some materials retain heat longer than others while others transmit or lose heat more quickly. Later in the year, while studying various structures of plants and animals, they investigate the effect of different types of body covering on heat retention and loss. Finally, in an earth science unit, Sonja learns that bodies of water with differing depths and earth surfaces of differing materials absorb or reflect heat energy at differing rates.

Marta's fifth grade class studies the water cycle in the fall. She and her partner conduct a variety of investigations involving evaporation, melting, and freezing water. During the winter, she studies the earth and what it is made of. Her team investigates rocks and does research on how rocks are formed. They make a video presentation using clips from documentaries and photos from books to accompany the hands-on activity for their final project. As spring approaches, her class begins studying life cycles. Since Marta had studied butterflies' and frogs' life cycles before, she decides to investigate life cycles of plants. Her teacher suggests studying "fast plants" (those that have fast life cycles), which grow from seed to seed in 35 to 45 days. Several other students decide to cultivate *Brassica rapa* also. They will then compare data.

Charlene's eighth grade science class is currently involved in an interdisciplinary unit with the rest of her team's teachers. They are investigating rockets and missiles as their social studies classes discuss modern war weapons. She builds and launches her rocket and measures its speed and trajectory. Earlier in the semester, her team was involved in a study of the local environment and river valley. She made some erosion models and researched rivers on the electronic encyclopedia in the computer lab. As part of the cross-age tutoring program she's in, she teaches Delfino, a fourth grader from a local feeder school, how to look things up on the computer's encyclopedia. The interdisciplinary unit that started off the school year was centered on health and well-being. Charlene wrote an "I-search" paper on a health care profession, made (along with three other class members) a video presentation to her social studies class on the "health" of the economy, and put together a hypermedia presentation on drugs and alcohol for her science class, which included pie graphs of statistics she'd gathered from several classmates and photos of microscope slides of damaged tissue. She is able to relate all the science projects she created and helped with to other classes she takes.

Assessment in the science program relies heavily on examining students' verbalization, writing, and model building in performance-based tasks and open-ended questioning.

- **Students perceive no qualitative difference between assessment and instructional time.**

Second grade students keep a record book of pictures and words about how many washers it takes to sink a square of wood in a tub of water. After several days of experimentation with different sizes of washers and pieces of wood, students are asked to write down their conclusions about the interaction of weight and surface area in water. From observations, reading the record book, and talking with the students, the teacher is able to determine whether the students understand the concepts.

Students in a fifth grade class are using metrics to learn about mass, volume, and linear measurement. As an assessment activity, the students are asked to find the mass, volume, and length of different items using the same tools with which they have practiced.

In a performance-based assessment, eighth grade students are presented with a question that has not been discussed in class but for which they have learned all the information necessary to solve the problem. In an assessment of a chemistry unit, the students are asked to identify an unknown solution in terms of acid or base and for conductivity, and then to determine a good use for the solution.

- **Throughout the year, students' progress is asessed via different types of assessment embedded in the curriculum.**

The teacher has a folder for each second grade student. Following most activities, the students' work goes into the folders. At the end of the grading period, the students select their best work to be kept and the rest to be taken home. Roughly one-third of the work is from oceanography, one-third is from living things, and one-third is from a unit which stresses that energy comes in different forms.

Fourth grader Don's portfolio contains essays, graphs, poems, lab reports, stories, pictures, videos, and diagrams reflecting an equal balance from units on weather (earth science), matter (physical science), and adaptations (life science). Examining the portfolio reveals that for every month of school so far, there is a write-up of a performance-based task or lab report, answers to open-ended questions, and notes for each student's presentation.

During the typical sixth grade year, Katie takes short-answer exams, timed lab tests, and take-home tests, and she completes performance lab assessments that are done in small teams and that require the teams do expository writing.

Professional Practices

Teachers develop long-range plans for fully implementing the science program. They:

- Commit time to talk about the science program and how to teach science thematically and conceptually.
- Determine what concepts they want their students to learn.
- Develop a content matrix based on Chapter 7 of the *Framework* which involves developing:
  - One schoolwide unifying concept for each of the life, earth, and physical sciences
  - Grade-level concepts for each of the unifying concepts (these are developmentally appropriate and sequential)
  - Subconcepts for each grade-level concept
- Use flexible scheduling so teachers can plan together and organize extended, in-depth explorations.

Teachers participate in ongoing professional development. They:

- Seek long-term professional development opportunities provided by the:

  - California Science Implementation Network (CSIN)
  - California Science Project (CSP)

- Become actively involved in, attend conferences of, and make presentations to:

  - National Science Teachers Association (NSTA)
  - California Science Teachers Association (CSTA)
  - Regional and local science organizations

- Attend training on the new science module provided by the California School Leadership Academy (CSLA)/School Leadership Center (SLC).

- Gain knowledge, competence, confidence, and enthusiasm for science by working with scientists at local universities and working during the summer months for science-related companies, science centers, and museums.

- Network with other schools, such as those conducting scope, sequence, and coordination projects.

- Try ideas from people who have joined CSIN and/or attended CSP to learn how to use materials on-site, and practice with the help of a colleague.

- Participate in the California Learning Assessment System's (CLAS) field testing of performance-based assessment and attend workshops on scoring.

- Subscribe and contribute to national and state science publications, such as the California Science Teachers Association's newsletter.

- Purchase science publications produced by the California Department of Education.

Teachers use classroom practices that enable all students to construct meaning for themselves. They:

- Teach thematically and conceptually.

- Use the constructivist approach to facilitiate students' learning.

- Determine and assess students' prior knowledge and preconceptions.

- Encourage students to make predictions prior to observations and activities.

- Use materials to teach concepts identified on the school's or district's content matrix and the support constructivist approaches.
- Provide purposeful hands-on experiences that overtly connect to the larger concepts and real-life experiences.
- Use open-ended approaches that enable students to solve problems creatively.

Teachers, working with administrators, focus resources in planning and implementing their science program. They:

- Assist in the decision-making process to allocate money and release time for professional development in the area of science.
- Pursue resources in the school, district, and community.
- Organize science booster clubs and after-school science clubs.
- Take advantage of district Eisenhower funds, school improvement funds, Chapter 1 funds, and SB 1882 regional consortia.
- Use release time to explore available grant opportunities and write grant proposals.
- Collaborate with library media personnel to organize and inventory materials on-site; e.g., literature that connects with science topics being taught.
- Purchase additional materials and equipment and pursue people to work with them.
- Explore and use parent and community resources.
- Take advantage of potential human resources by educating parents about the need to improve the school's science program and exploring cross-grade partnerships with middle and high school science teachers.

Teachers use a variety of performance-based assessment techniques to assess students and the program. They:

- Encourage students to assess their own work and conceptual understanding.
- Assess students individually and in groups.

- Use hands-on activities, investigations and research, problem-solving situations, and open-ended questions to assess students.
- Use observation as part of their assessment of students.
- Give students short-term and long-term projects in which they construct, perform, and produce.
- Ask students to apply their knowledge and conceptual understanding as well as make connections.
- Ask students to engage in scientific thinking in life, physical, and earth science.
- Use results to monitor students' growth over time and to modify their own teaching.

Science Resources

The following publications are available from the Bureau of Publications, Sales Unit, California Department of Education, P.O. Box 271, Sacramento, CA 95812-0271; (916) 445-1260.

Science Framework for California Public Schools, Kindergarten Through Grade Twelve, 1990.

Literature for Science and Mathematics, Kindergarten through Grade Twelve, 1993.

Greatest Hits of Environmental Education, 1993.

The following publications are available from their publishers:

Elementary School Science for the 90's (1990). Association for Supervision and Curriculum Development, 1250 N. Pitt Street, Alexandria, VA 22314

Science for All Americans (1989). American Association for the Advancement of Science, 133 H Street, NW, Washington, DC 20005

Science Matters (1990). Hazen and Trefil, Carnegie Institute of Washington, Doubleday, 1530 P Street, NW, Washington, DC 20005

The following organizations offer additional information:

Academic Model Technology Project, Project TOPS, Conrad Mezzetta, Director, S. San Francisco USD, 398 "B" Street, South San Francisco, CA 94080; (415) 877-8744

California Science Implementation Network (CSIN), c/o Kathy DiRanna, School of Physical Sciences, University of California, Irvine, CA 92717; (714) 856-7809

California Science Project, Sacramento Area Science Project, CRESS Center, University of California, Davis, CA 95616; (916) 752-4284; FAX (916) 752-6135

California Science Project, South Coast Science Project, Mathematics Department, University of California, Santa Barbara, CA 93106; (805) 893-8718, 3355; FAX (805) 893-2385

California Science Teachers Association, P.O. Box 191618, Sacramento, CA 95819; (916) 278-5431

California Scope, Sequence, and Coordination Project, c/o Helen Kota, California Department of Education, 721 Capitol Mall, P.O. Box 944272, Sacramento, CA 94244-2720; (916) 657-5475

National Science Teachers Association, 1742 Connecticut Avenue, NW, Washington, DC 20009; (202) 328-5800 Field Services

Visual and Performing Arts Criterion

Focus Statement

From the early years, students learn about themselves and their world by drawing and painting, sculpting, singing, playing musical instruments, dancing, and choreography and through dramatic exercises and presentations. A strong visual and performing arts program builds on the above by providing all students a rich variety of activities that enable them to make sense of and find meaning for their lives through dance, drama/theatre, music, and the visual arts. Students participate in and think about the arts. They create works in the arts as well as study and analyze artistic traditions from many cultures. In a comprehensive school program, the arts are a basic part of the education of each student. The arts are studied in their own right as well as integrated into other subject areas. Students' written reflections and evaluations of their own work in the arts, and the work of others, develop and refine their critical judgment. These reflections may become a part of their assessment portfolio. Frequent opportunities to see professional arts performances, demonstrations, and exhibits at school and in the community provide students with models. Parents, artists, and performers in the community are invited to share their expertise in the arts. Anyone who enters the school sees, hears, and feels the impact and presence of the arts through murals, exhibits, musical activities, performances, classroom arts instruction, and the instructional practices used for teaching a variety of subject areas.

The *Visual and Performing Arts Framework* identifies four components of instruction that apply to all the arts for all students: aesthetic perception, creative expression, arts heritage, and aesthetic valuing. Each of the arts provides students with increased perception that awakens their senses and helps them better understand and interpret the world around them through nonverbal as well as verbal communication. In a well-planned arts program, students gain the skills necessary to creatively express their ideas, feelings, and imagination as they produce works in the arts. They have the opportunity to express themselves in a way that does not rely only on speaking, reading, and writing. They study historical and contemporary arts from throughout the world and reflect on the role of the arts in many cultures. Students gain an increased awareness of aesthetics while they develop criteria to describe, analyze, interpret, and judge works in the arts. They learn how to apply standards in order to evaluate and improve their own work and to preserve and improve the quality and aesthetics of their own lives, the environment, and their community.

Student Work

The arts program for each student is balanced to include instruction in each of the arts and takes advantage of natural connections across the curriculum.

- **Students gain experience in the four components of arts education—aesthetic perception, creative expression, arts heritage, and aesthetic valuing—as each participates, creates, learns about, and analyzes in dance, drama/theatre, music, and the visual arts.**

  Fifth graders are learning to draw landscapes. They do several exercises in basic perspective, then analyze famous landscape paintings to see how artists dealt with foreground, middle ground, and background. Susan compares the realism used by painters of the American West, such as Albert Bierstadt, with the treatment of the landscape by impressionist artists such as Pierre Renoir and Camille Pissarro. The class learns about these two styles and how they relate to the times in which the paintings were created. A lively discussion results in which students debate the differences and similarities between the realistic work and the more abstract work of the impressionists. They then develop criteria for evaluating the landscape paintings that they will develop from their own drawings.

  As part of a spring festival of the arts, seventh and eighth grade art students, in conjunction with the orchestra, chorus, and language arts and drama classes, participate in a celebration of Mozart's birthday. Based on prior studies of portraits from different cultures and time periods, they plan and create, in the media of their choice, a stylized portrait of Mozart and his real or imagined environment. They base their images on actual sixteenth-century European portraits. Their artwork is displayed in the multipurpose room next to poems about Mozart that students wrote in their language arts class. Parents and the community are invited to an evening of the arts. Student docents conduct informational tours of the display. Everyone looks at the pictures, reads the poems, and listens to performances of Mozart's music by the chorus and orchestra.

- **When appropriate, student learning in the arts includes relating the arts to each other.**

  As part of a statewide tour, a performing opera company has invited the entire school population to a dress rehearsal of Steven Sondheim's musical production *Sunday in the Park with George*.

> The second grade teacher takes the opportunity to teach about Georges Seurat and pointilism. Jessica is experimenting with "dots" in the way she understands Seurat to have used them in his art. Her painting shows a "dotted" rainbow. Nicholas uses his crayons to "dot" a hippo. Johanna tells Nicholas that his hippo looks like the ones which dance to music on the Disney Channel. Mrs. Kool later brings in a record of *Sunday in the Park with George* and a tape of the "Dance of the Hours." The class decides what type of dance movements seem to go with different music phrases.
>
> After attending the dress rehearsal, the fourth grade teacher and the children talk about the placement of the songs in the opera they all saw and the sequence of the story. The class asks to "act out" the sequence of events as they play the recording of the songs sung during dress rehearsal. Jenna volunteers her mother to help with costumes for a mini-production.
>
> Before the dress rehearsal of *Sunday in the Park with George,* which they will view with the rest of the school, seventh grade students study the works of post-impressionists and their use of color and light. They learn the history of the artist Georges Seurat and his pointalist style. The teacher brings in a recording of "Color and Light" from the Sondheim show, and the students, paying particular attention to its staccato style, paint to the music.

As part of a discussion on communication and how people communicate their feelings, emotions, and thoughts through body movements, third grade students study several art prints showing movement and action of the human form, such as *Parade,* by Jacob Lawrence. They also read the book *The Dancing Granny,* by Ashley Bryan, and discuss the illustrations, which are done in a quick-gesture drawing style. Using African rhythms, students are led through simple African dance steps and together make up a dance depicting the movements of Granny Anika in Bryan's story. After dancing, the students take turns assuming a dancing position while the other students draw quick-gesture drawings of them.

While studying in their music textbook selections of the music for the ballet *Billy, the Kid,* by Aaron Copland, fifth grade students discover the music is filled with American folk songs like "Goodbye, Old Paint" and "Great Grandad," which they recognize. After reading about the story of the ballet in their music textbooks, the children, in small groups, brainstorm the types of scenery and costumes they would expect to see in this ballet that would reflect the historical period and geographic location in which it is set. Since each group is assigned to do a project around this piece, Susan's group decides to create dioramas to illustrate many of the scenes. Lisette's group sketches costumes. Tom's group decides to ask the music teacher to help them learn the melody of "Goodbye, Old Paint" on the recorders. Sara, who takes ballet, puts together a small troupe of dancers from the class to create movement to interpret "Goodbye, Old Paint." The teacher invites the three first grade classes into his room to view the presentation of the projects.

- **When appropriate, students apply learning and skills developed in the arts to acquire knowledge in other subject areas.**

Loni's third grade class makes a floor plan of their classroom. On the floor plan, they draw a pathway over which they will move. Loni and her friends Leikisha and Ben create a legend showing symbols for the dance steps which they will use. Dashes translate to runs. Stars become jumps moving backward. Small circles signify a small series of turns, and checks signify skipping. Loni, Leikisha, and Ben are now in the process of reading their map by translating the symbols into the actual movements. The students now are better able to understand the purpose of a legend on a map and that the legend can depict many different things such as distances, heights of the terrain, and bodies of water.

After both drawing and painting the human figure, the third grade students use their new ability to make diagrams of one of the systems within the body. Margie paints the digestive system and labels it accurately. The diagrams are then displayed in the school science lab.

After reading excerpts from a pioneer woman's diary, fifth grade students collaborate in the development of dialogue and movement sequences based on entries in the diary. Because the information is from a primary source document, each small group pays close attention to the details and works to express them in their own dramatic presentations.

The sixth grade class investigates the use of aqueducts and irrigation systems throughout the history of the Roman Empire. Katie uses what she learned when studying perspective drawing during art to create an illustration showing how the aqueducts worked. This process deepens her understanding of the system and also helps her classmates when she explains her illustration to the class.

- **Students relate learning in other curricular areas to learning in the arts.**

Mrs. Kim's third grade class is studying patterns in mathematics and cultures in their art lessons. Mrs. Kim shares many examples of dance, drama, music, and visual art from her Chinese heritage and teaches students some basic Chinese painting strokes. Mr. Lanuza, Cynthia's father, shares many examples of drama, music, and visual art and teaches the students a dance from his Mexican heritage. Today the students are reviewing the dances they learned from these countries. They make two lists. One includes descriptive words about the Chinese dance. The other list has words describing the Mexican dance. Mrs. Kim and the students are now using their knowledge of patterns to show the similarities and differences between the dances of the two cultures.

Fifth grade students in a social studies class study the American Revolution. They discuss many aspects of its causes and ways in which the people were encouraged to unite. The role of music is discussed, and the song "Chester" is played. Zack says that he remembers hearing a hymn like that at his grandmother's church. The teacher asks Zack to bring the words to this hymn to school so the class may compare the lyrics to those of the war song. The students discover that the song was written first as a church hymn and was modified during the Revolution. The lyrics to this William Billings song are analyzed to assess the changes that inspired the revolutionary feeling. Charles states that he did not know that songs were used over and over again for different purposes.

Using the book *The Golden Mean,* which connects mathematics and the fine arts, the sixth grade students see how important proportionality is in Western architecture and sculpture. After discussing the "divine proportion," Ronnecia draws a human body in proportion. This experience adds to the skill required to draw a class mural and to her ability to draw a diagram in science.

The arts program heightens students' senses and increases their discriminatory and perceptual skills to help them understand the world around them.

- **Students increase their kinesthetic, vocal, visual, tactile, aural awarenesses, discrimination, and perception.**

A kindergarten class is exploring shapes during a teacher-guided improvisation. Every time the drum stops, the students freeze in a shape. This time, the teacher, Mr. Meacham, says, "Find a low level shape." Jenny lies on her side, extending her arms and legs. Julie curls up in a tight ball. When the drum begins again the students move among each other. This time when the drum stops, Mr. Meacham says, "Find an unusual or a strange shape." Fred twists his arms and legs into a pretzel shape. Richard supports himself on his head, one forearm, and one knee while he stretches his other arm and leg into the air.

As a continuation of their study of quarter note/eighth note patterns, second grade students take turns following the rhythm pattern of "Dance of the Sugar Plum Fairy" from *The Nutcracker Suite*. Javier points to the rhythm on the teacher-made chart as Susie's group taps out the rhythm on their hands. Sia's group taps the rhythm on their legs. Krissie says that the pattern at the beginning is the same as the pattern at the end. After reviewing the patterns with the teacher, Jarrod says that the form of this song is the same as the form of "B-A-Bay" from the second grade music series, or ABA form. Brielle shows her picture of ABA form in which she has used a square, then a circle, then another square.

Third grade students are each given a natural object such as a seashell, a piece of driftwood, a rock, or a seed pod to observe and study. They spend a few moments handling and observing their items and then together compile a list of words which describe the colors, shapes, textures, and forms of their items. Students then use the objects as models for a lesson on contour drawing. The contour drawings are displayed with descriptions the students write about their objects.

- **By refining their perceptual abilities, students become more discerning as observers, consumers, and creators of the arts.**

When preparing a skit about changes in their community, the third grade class makes a list of how people in their community earn their livings. Students are asked to think about and discuss how these people move in their jobs comparing and contrasting, for example, the movements of workers at the lumber mill with the check-out clerk at the grocery store or the librarian. Students hone their perceptual abilities as they are asked to portray characters at work. Jim exaggerates the way he moves back and forth as he characterizes a bricklayer.

Middle school students in art investigate the role of color in advertising. They go on a field trip to a local advertising company, and afterward they conduct a survey to determine what colors specific age groups choose and whether males and females within those groups choose certain colors. In small groups, results are tabulated and conclusions drawn. The class then speculates about the implications of their results. In concluding their investigation, each group compiles lists of common products, the color schemes of their packaging, and who prospective consumers might be. Based on this investigation, each student creates a product package directed toward a specific consumer group. The class critiques and selects ads for display in the student gallery and to send to the advertising company as an example of how they applied what they have learned.

- **Students learn that they can use skills in the arts to communicate ideas, thoughts, and feelings about themselves and the world.**

Third graders are creating dances that communicate their feelings about certain movements. One movement in their dance must be a move they do not like to do, one must be hard for them to do, and one must be easy. Roslyn, Louisa, and Amy choose turns as the movement they like to do and a slow roll on the floor as the movement they do not like to do. They will try to balance on one leg while lifting the other leg in the air for the difficult movement and skip in a big circle for the movement that is easy for them to do. They are practicing the steps now so that one movement will flow into the next when they present their dance solution to the class.

Reflecting on many ways to communicate a thought or idea, fifth grade students present scenes they select from Theodore Taylor's book *The Cay*. One group creates an illustration, using bold tempera colors, showing Phillip with Timothy on the raft. Another pair dramatizes the scene in which Timothy teaches Phillip how to weave palm fronds, adapting their dialogue from the text. Still another group decides on a living sculpture, complete with classmates as trees, shelter, and characters, depicting the hurricane as they felt is had happened in *The Cay*. Using skills developed in drama, Marcus pantomimes Phillip hunting fish in his pool. Czizette asks if they can perform for another fifth grade class.

Sixth grade art students participate in a discussion of symbols in works of art. They move into groups of four and begin designing banners that depict their symbolic interpretation of activities in their classes. Gene insists on sports logos for his banner, while Marie prefers animals she has studied in science. Their group decides to divide the design into four sections. Each student has an area to express his or her own ideas. They connect the sections with a bold outline of a shield. Their banner is hung in the art room. The rest of the banners are distributed throughout the school for teachers to display.

- **Students learn that each arts discipline is based on certain elements and principles that help the artist express his or her thoughts and feelings.**

First grade students take a walk in the neighborhood to observe trees. They are told to focus their attention and senses on the texture of the bark (rough or smooth), the shape and clusters of the leaves, the lines formed by the branches (fat, skinny, straight, curved), and the color shades of green and brown (e.g., yellow-green, dark brown). Back in class, students form shapes with their bodies reflecting the shapes of the trees. The teacher displays study prints of paintings and drawings of trees by past and contemporary artists around the room. They talk about how the artists used line, color, texture, and shape to express a thought or feeling about trees. After students sketch pictures of trees and learn to mix paint to match the colors they saw, they discuss how they used color and line to express their ideas or feelings. Gretchen says, "I used big fat lines and dark colors because my tree is very strong and powerful."

Second grade students are learning about rhythm as used in music. They learn some American cowboy songs, such as "The Big Corral." As they listen to the music, they pat their laps in time with the steady beat. Sam says it reminds him of how he feels when he and his dad ride a horse together. Sally and Eric are asked to play the beat on woodblocks. While some children sing the song, others move to the beat in a circle around the room. They agree that through the use of a steady rhythm, the songwriter expressed a mood or feeling of cowhands riding as they drove cattle across the Western plains.

- **In their discussions, students use the vocabulary associated with each of the arts.**

In groups of three, students in a second grade class are asked to create movement phrases using leaps, turns, falls, jumps, or rolls as their steps. The manner in which they do their steps and the order in which the steps are placed is determined by each group. They are told that in the discussion following each presentation, they will describe the movement phrase in terms of dance elements they have learned such as vibrating, smooth, even, uneven, low level, and high level, so they should be aware of these terms when they plan their movement phrase. Time is provided for the students to solve this open-ended problem and to smooth the execution of their phrases. Each group shares its phrases with other classmates and a discussion follows.

Third grade students have a bulletin board set aside in their classroom for art reproductions. These are changed each month. Alongside the reproductions are vocabulary words associated with the elements and principles of the visual arts. Students use these words in their discussions and writing about the art. Examples of such words are *form, value, texture, rhythm, balance, space, details, horizontal, primary colors, overlap, shade, shape, symmetry,* and *two-dimensional.* They discover that many of these words have different meanings in another context.

The arts program engages students in activities that focus on and encourage communication, originality, and self-expression.

- **Through the arts program, students gain the skills necessary to creatively express their ideas, values, feelings, and imagination as they produce works in the arts.**

After watching leaves being blown around the playground by the wind, first graders Anthony and Garrett create a dance about leaves. "Remember last week when we moved real fast and then real slow?" asks Garrett. "Yes," responds Anthony, "those kinds of moves looked like the leaves we watched." The boys experiment with fast and slow moves. Anthony decides to use slow twists and curls almost in place to suggest those leaves which are being nudged by a gentle wind. Garrett uses rapid running and leaping movements in spurts around Anthony to suggest leaves being tossed by a strong wind.

After listening to a reading of the book *Amazing Grace,* by Mary Hoffman, second grade children develop a list of feelings which Grace experienced in the story. They find their three favorite ones and discuss how people express those emotions. They try expressing the feelings through body shapes, through movement of body parts such as the hands and arms, and through body movement. Eventually, the children find a dance movement for each feeling. They sequence these movements together forming a beginning, middle, and end. They call their class dance "Grace Shows Her Feelings."

In exploring the importance of trains in the development of the West, fifth grade students sing "Pat Works on the Railroad" and talk about the Irish immigration during the building of the transcontinental railroad. A recording of "Little Train of the Caipira," by Villa-Lobos, is played, and the students analyze the sounds within the piece which remind them of trains. Suzie hears the "click-clack" of the wheels on the tracks, while Estella notices that the music started slowly, like a train, and slowed down at the end, like a train. A recording of "Pacific 231," by Arthur Honneger, is played, and the same process occurs. The teacher brings in a variety of percussion instruments on which the students have become proficient. In small groups, students decide on instruments they need for creating their own "Train Symphony." After the instruments are disbursed, the groups practice their music. The works are performed and critiqued as to their appropriate train-like sounds. Each group gets a recording session, during which the piece is recorded on an audiocassette for future appreciation.

After students in the eighth grade social studies class have studied the Constitution and the Bill of Rights, they are given several options for communicating what they know about one of the ten amendments. Many students who take art choose to create a collage or to use a series of illustrations without words. To organize and create this assignment, they must apply the knowledge and skills acquired in art, including unique layout, bold use of line and color, contrasting and harmonizing textures, calligraphy, and caricature rendering. The challenge is to clearly communicate an amendment in their work.

- **Students learn and then apply the basic arts elements and principles to their own work.**

For their report on a field trip to an aquarium, fifth graders Natasha, Laureen, and Sean prepare a dance study on the manta ray. They explore and select those moves which convey the floating and darting movements of this fish. As phrases are developed, they find one of the floating phrases is exactly the essence they want to express. They decide to return continually to this phrase, alternating with the other phrases using "The Aquarium" from Camille Saint-Saëns's *Carnival of the Animals* as accompaniment. This rondo structure allows them to express the primary movement they saw the ray use, combined with contrasting moves like darting, flipping, and rolling.

- **Students study the forms and structures of great works in the arts in preparation for creating their own works.**

Second graders listen to selections from Prokofiev's *Peter and the Wolf*. Students identify the different instruments with the characters and themes they represent. Using concepts and skills developed in drama, especially characterization and movement, each student selects a character to portray. Students group into acting troupes. After planning and practicing their roles, students present their interpretations with the music of *Peter and the Wolf* to the rest of the class. As an extension, students are read Barbara Cooney's pop-up book version of *Peter and the Wolf,* discovering that the author has given the traditional folktale a different ending.

Second grade students study the forms and structures of the works of Wassily Kandinsky. After a discussion of the elements of design and the influence of music in the structures of many of his pieces, Jeanne paints her own interpretation of the theme of "Jazz," while listening to appropriate music.

- **Students draw on their experiences and knowledge to express ideas, values, and emotions in their works.**

A fifth grade class watches parts of the video of *Where the Red Fern Grows* that describe dogs and raccoons and how the boy in the story felt about these animals. The students participate in small-group discussions of their happy or unfortunate experiences with animals. The teacher shows a series of slides of works of art depicting animals, and students analyze what feelings about the animals are related in the art and how the artists used the art elements to communicate the feeling. Students create a work of art in a media of their choice that reflects their own feelings about an animal or that makes a social statement about animals.

- **Students use a variety of strategies and materials to foster the skills needed to create works in the arts.**

Seventh grade students involved in a drama production realize they need to work on their sensory awareness, emotional recall, and concentration in order to improve their acting abilities. With the teacher's guidance, they develop several exercises to work on. Marcie is shown a tray containing many different objects. The tray is removed from view after a short time. She then tries to recall and describe all the objects. Mike recalls the experience of eating an ice cream cone, concentrating first on the sensory aspects and then on his own feeling response. Several students watch a one- or two-minute video segment from *Raisin in the Sun* depicting a moment of high tension. The students recreate the scene, then watch the video again. During their final performance at the school, an interpreter signs for a group of deaf children in the audience.

The arts program includes the study of historical and contemporary artists and their works throughout the world and reflects the roles of the arts in a variety of cultures.

- **Students compare and contrast periods, cultures, and major themes in the arts from throughout the world.**

  Using their art textbook, art magazines, and art books, each sixth grade student selects an artist who worked in one of four styles: realistic, abstract, nonobjective, or surrealistic. Each student prepares a short oral or written statement that includes the artist's name, style, the name of one of his or her works of art, the date the work was created, and a sentence or two about events that happened during that time period. Carol finds that she likes the powerful self-portraits done by Frida Kahlo and that, while they have realistic elements, they are abstracted from real life and are surrealistic. Carol notes that Kahlo lived in a time when there was a socialist movement in Mexico in which she and her husband, the artist Diego Rivera, participated. The students discuss how this might have influenced the work of the artist.

- **Students understand the effects of the arts from past and present cultures on today's society.**

  Students in Mrs. Franco's sixth grade class are studying the myths of ancient Greece, in particular that of Pyramus and Thisbe. Nicole recognizes the story of young love gone awry as similar to that of Romeo and Juliet, which was recently presented at the high school. A class discussion ensues, and research begins on other stories based on this myth. The students discover *West Side Story* and listen to a recording of the songs in class. Mrs. Franco's students decide to retell the story in modern times and write it as a play. The play is then performed for the other sixth grade classes.

  The intermediate or middle school students, working with an artist-in-residence, develop a set of slides of buildings in the community or of famous buildings in the United States whose architecture reflects a culture from the past or from another part of the world. Students view the slides and are guided by the artist and teacher in discussing the elements in the architecture that are from another time and/or place, relating these to what they learned about the time and place in their study of history. Mary notes that the architecture of her church reflects that of the California missions. Miguel sees that the courthouse has columns similar to those of the Parthenon in Greece.

- **Students understand that throughout history, artists and their works have served as mirrors of their societies.**

The music teacher, in reaction to the fall of the Berlin Wall and the ending of communism in the Soviet Union, draws the students' attention to the parallel between her feelings and the feelings generated in some people during the Vietnam War era. She plays "Give Peace a Chance" and "Imagine," and the students compare the expressed feelings of the composers/lyricists and their own feelings generated during these recent events.

Seventh grade students learn about the changing historical role of women through the artistic portrayal of women as Madonnas. Beginning with Christian icons and proceeding through the Renaissance, the Reformation, and into the twentieth century, thematic paintings and sculptures are analyzed. Changes in color and style of garments (blue, white, purple, and red), hairstyles (head covered in early portrayals, popular hairstyles of the day in later versions), facial expression (no emotion evolving into serene and happy appearance), and halos (predominant and large to disappearing altogether) are noted. Examples by Giotto, Leonardo, Raphael, Titian, Michaelangelo, Bruegal, Picasso, and Thomas Hart Benton are among many artworks studied. Christina says that they read *The Song of Roland* in social studies and that their teacher pointed out the role of women as "idealized, like the Virgin Mary." This prompts a discussion of the changing attitude toward religion and how it affected the artistic portrayal of the Madonna. As a result of their lesson, students come to a better understanding of how works of art reflect the attitudes, styles, and beliefs prevalent in a given historical period.

- **Students can communicate about the contributions of great innovators and creators in the arts.**

While working on a unit on creating nontraditional sculpture materials, fifth grade students are assigned to research sculptors who were great innovators. Juan reports on Alexander Calder, who took the innovative step of making sculpture move. Calder called his sculptures mobiles, and Juan did a mobile for his sculpture project. Suzanne reported on the work of Cristo showing slides of "The Running Fence" and "The Umbrellas" projects.

After reading about Merce Cunningham and his chance method of composing dances, eighth grade students feel an understanding of this method would be more complete if they were to experience the system themselves. All students learn a series of movements. Then small groups arrange the movements into phrases using Cunningham's chance method.

The arts program includes instruction which provides opportunities for students to develop and apply aesthetic criteria in order to analyze, interpret, and judge their own works and the works of others.

- **Students study and understand basic ideas, styles, and schools of thought in each arts discipline.**

After their teacher reads *Goodnight Moon*, first grade students recall the lullaby study they did with the music teacher earlier in the year. The teacher's soft voice and gentle manner in reading the story evokes the following aesthetic responses from the students. Tanisha says that her mom sings lullabies to her baby brother to put him to sleep. Jeffrey asks whether they may hum "Hush Little Baby." The teacher rereads the story and asks them to hum softly. Suzanne quickly points out that lullabies must be sung softly, smoothly, and without surprises to really be lullabies, and this story sounds like a lullaby.

After analyzing and discussing the qualities of realistic, abstract, and nonobjective, two- and three-dimensional art, fourth grade students move into small groups to classify art postcards in these three styles. Marie and James have quite a discussion about what category to put a picture of Egyptian wall paintings in. Marie says they are realistic because they are people and are painted according to stylistic rules. James says they are abstract because they do not look like real people.

Students in the fourth grade are learning about folk music from various cultures represented in California, comparing and contrasting forms and styles. Carlos's uncle, who plays in a mariachi band, loans the class a book on Carlos Chavez, who used Mexican, Aztec, and Mayan themes to capture the spirit of Mexico in the music he composed. John, who is Hungarian, wants to know whether any composers used Hungarian folk music in their music. The teacher plays a section of Bela Bartok's *Hungarian Sketches* entitled "Bear Dance" from the fifth grade music series records. Each child decides to research a composer from his or her culture who incorporated folk music in composed works. They enlist the band director's help.

- **Students apply arts criticism, aesthetic considerations, and analysis to their own works in the arts and to the works of others.**

Fourth grade students visit a special exhibit of the works of early California landscape painters at the city art museum. A docent takes the class on a tour on which they pay special attention to how the artists created a sense of depth in their paintings by using overlapping, changes in color value, and arrangement of elements on the pictures' planes. As a follow-up activity, students create landscape drawings on location at school and develop criteria for evaluating their work based on their experience at the museum.

In an eighth grade art class exploring the variety of ways artists express their ideas, Alex says that graffiti is the major form of expression among his friends and wants to know whether this is art. This leads to debates about what art really is. The majority of the class thinks that graffiti is a valid form of expression, but is it art? Kim points out that some of the pictures they looked at by Jackson Pollock and Franz Kline were a lot like graffiti. Some students think it is a form of vandalism, others a symbol of gang territory. They conclude that artistic expression is always changing according to the values and problems of the times, and so the criteria used to evaluate it may change as well.

- **Students evaluate their selection of movement, media, and/or technique which they used to communicate an idea, thought, value, or feeling.**

Students in Jon's seventh grade dance class are asked to express their images of today's teenager through dance. They are asked to observe students around the school. Once they have their images, they are to select dance forms which will help in communicating their ideas. Jon's choice of dance form is tap. He is in the process of making a journal entry evaluating his choice. He writes that tap is loud, yet the noise is organized. He says the organized noise has variety with endless rhythms. Jon notes the energy of tap is always high, often with energetic spurts and unexpected points, just like teenagers.

- **Students apply what they learn in the arts to respond to, preserve, and improve the aesthetic quality of their own lives, their community, and the environment.**

In their study of music, students in the fourth grade sing "A Friend of Mine" and "Garbage Man Blues." The class then discusses the importance of recycling and adds additional lyrics to the song about the ozone, the rain forests, and so on. They teach the songs to all of the fourth graders. Students are given the school's policy on recycling paper, plastics, and aluminum and asked to consider a recycling policy at their home.

After studying the primary and secondary colors, and experimenting with mixing them in watercolors, the students take a trip to the local mall to evaluate various uses of color. Nicholas, a fifth grade student, then decides to evaluate his wardrobe. In response to the lessons, he uses his knowledge to coordinate his wardrobe and models for the class. Marie changes the color scheme in her bedroom and paints a picture of it to share. Each student verbally shares the effect the change of color has had on his or her mood or feeling.

- **Students recognize and value invention, craftsmanship, and originality in their works in the arts and in the works of others.**

Fourth grade students watch Marcel Marceau's film *Pantomime—The Language of the Heart*, noting and discussing the invention and craftsmanship in the classic pantomimes and those of Marceau's own character—Bip. Students develop characters to portray in their own pantomimes. They brainstorm topics to address, and time is allotted for planning and preparation. Some students decide costumes would add to their presentations, while others want to present at specific locations around the school. After the presentations are made, students discuss the variety of ideas and characters created.

The arts program demonstrates that each of the arts transcends all cultures and leads to multicultural understanding.

- **Students understand that the arts of all cultures are worthy of study, appreciation, and value.**

While visiting the fourth grade class, Kioshi's mom, who is a Japanese koto player, demonstrates the pentatonic scale used in the traditional Japanese folk song. Juan tries several times to play the instrument. After this experience, Juan finds that he can incorporate the pentatonic scale in the music he is composing on the electronic keyboard.

To enrich her fourth grade multicultural unit, Mrs. Diaz asks the parents of her students if they would come to school to share and/or teach dances from their heritage. Several parents agree to this request. Today Jeff's mother, Mrs. Magalang, is sharing many aspects of their Filipino culture. She teaches the students a simplified version of

"Tinikling." The students enjoy the activity as they take turns practicing with the long bamboo poles. They are trying to do the correct dance step so that their feet do not get caught between the two poles when the poles close. After this experience, a group of students form a small dance troup specializing in "Tinikling," adding their own style to the original form.

- **Students see how the arts of cultures from which our society emerged are relevant to our current life as links to our origins, guides to our future, and starting points for new ideas.**

After studying the culture, contributions, geographical location, and art of the Amish people, the fifth graders view many examples of old and modern Amish quilts. This leads to several students comparing the Amish quilts to those they have at home. Tonya's grandmother comes to class the following week and shares a history of African-American quilting, showing examples from her family's collection. Several students decided to make a quilt that reflects patterns they see in the world around them.

For open house, eighth graders Maria and Sonia are presenting their report on The Roots of Jazz Dance. They are weaving samples of music and dance steps through their talk. Maria has traced the Irish-European root. Sonia has traced the African root. Together they are explaining how aspects from both cultures connected in America to evolve into our native dance form of jazz.

- **Students become receptive to artistic productions from different cultures; they understand the important role the arts play in communicating the values, beliefs, desires, and hopes of a particular group of people.**

In celebration of Black History Month, fifth grade students play instruments they made after investigating the origins of African-American music. Call and response was a form used in spirituals and folk and gospel music. It was used, they found, as a vital means of communication (e.g., gossip, secret messages, consolation), when slaves were forbidden to speak to one another. Then the students use this form to create their own compositions. While the student with video production skills tapes them, the students demonstrate how to make instruments from recycled materials in the style of early African instruments and perform their compositions. Kenya asks if they can share this tape with their friends in the primary grades. Yue Xi and Wei Yuan suggest that in addition, they teach some of the call and response songs to their non-English-speaking Chinese friends, so all will be able to sing together. They present the videotapes to the library media center so they can be used by others.

- **Students have direct contact with images and artifacts, music, dances, performances, and presentations from many cultures; they participate in a variety of activities connected with this contact to enhance their multicultural understanding.**

After viewing a performance of *The King and I* put on by the local community college theater department, students in the sixth grade class reenact the schoolroom scene, which included a geography lesson. Johann notes that this scene is a good example of people having different points of view. They rewrite the scene setting it in a modern day American classroom and play it again.

To reinforce their study of ancient art, middle school students take a field trip to the local natural history museum to look at the collection of cultural artifacts. Emma sketches design elements from ancient Greek pottery, and Klaus is interested in the decoration applied to many of the weapons and tools from China and Africa. Jim sketches and takes notes on several African sculptures. Juanita draws pictures of utilitarian items from ancient Egypt. Working at school with the art specialist, the students meet in small groups to share their discoveries from the museum and to debate questions such as: "What is an artifact? Are tools and pottery art? Did the people who made these objects think of them as art objects? What are the criteria for an object to be a work of art?" The whole class then hears reports from the small groups.

- **Students use a variety of arts resources to recognize the uniqueness and similarities of cultures.**

When teaching California history to her fourth graders, Ms. Taylor wants to emphasize that the cultural diversity in the state contributes to the character of California. Because they live in a small rural community, access to outside resources is limited. By looking at the music and art textbooks, she discovers many examples of songs and artwork from Spain, Mexico, China, Japan, Europe, and Africa. Ms. Taylor, a local choir director, works together with a parent who studied art to develop a unit in which small groups of students conduct research and develop reports, performances, or artwork that communicates the cultural group they were assigned.

Sixth graders are asked to think of where art is traditionally on display. Ji Won says she has seen it in temples and shrines. Kimberly suggests museums; Josh has seen sculptures in parks. Using these responses as a springboard, students form groups representing the diverse ethnic and cultural backgrounds of the school community. Each group presents past and present examples of the art of their assigned culture. Shahin brings a page of calligraphy from the Koran, and Gopal brings a miniature Indian portrait. Cho shares a statue of Bhudda, while Mawuto displays an African mask. Vivian insists on presenting the cover of her favorite CD and explaining how the animation she sees on MTV is a unique art form of her peer culture. The groups that are unable to bring in actual artworks find pictures or make videos to share. Each student responds to the display by writing a paper comparing and contrasting two of the works to each other and to the kind of art she or he is used to.

The arts program includes performance-based assessment for the full range of student and program goals for the visual and performing arts.

- **Students and teachers monitor progress both to discern student growth over time and to evaluate the quality of individual student performance in aesthetic perception, creative expression, arts heritage, and aesthetic valuing.**

Fifth grade students have been keeping journals/sketchbooks since the beginning of school. They use the sketchbooks for drawing during free time, sustained silent drawing time, and during directed lessons on contour drawing. They also write ideas for artwork and their thoughts about their drawings. They use these journals/sketchbooks as personal resources of ideas for artwork and creative writing. The teacher periodically collects the journals to monitor student growth and makes positive, constructive comments about the sketches and writing, giving suggestions for further exploration of areas in which the student has demonstrated an interest. Because Maria has concentrated on sketches of people dancing, the teacher directs her to books and study prints on the work of artists such as Degas and Toulouse-Lautrec. This interest leads to performance assessment when the teacher has Maria prepare a project which includes research on artists who depicted dancers (art history), her jester drawings from life (aesthetic perception), a work of art she creates from her jester drawings (creative expression), and a written critique/reflection on her work (aesthetic valuing). She answers the questions "What do you like best about the artwork you did, and what would you change?" and "When you compared two of the works you looked at by two different artists, what was similar and what was different?"

- **Student assessment includes projects, portfolios, and performance-based activities.**

Students in seventh grade art study the medieval illuminated manuscript. They are assigned the task of drawing and painting their names using this original style. As one of the ways to assess their work in progress, and in completed form, they select a video interview. Students form groups of three or four to accomplish this task. One operates the camera while another asks questions based on the criteria for evaluation. Ian asks Kris why he used such an elaborate design on his "K" but not on his other letters. Kris responds that the first letter of the first word in the illuminated manuscripts they looked at was always bigger and fancier than all the others. Each person in the group gets a turn at being a camera operator and an interviewer. The finished tape is used to help determine what rating they give themselves on their artwork and their understanding of medieval manuscript illumination.

- **Student assessment is woven into regular instruction.**

As part of their commercial art unit, many sixth, seventh, and eighth grade art students choose to enter the local newspaper's design-an-ad contest. The school is allowed only ten entries. Their teachers suggest that they establish specific criteria in order to select the entries. In addition to the rules required by the newspaper, they list characteristics that the best ads should have or demonstrate, including originality, imagination, and technical skill. Based on the established criteria, each student writes an explanation of why his or her entry should be selected. All the ads are displayed, along with the explanations. After evaluating each entry, the students use a scoring rubric to rate all of the ads. The numbers are tabulated and the top ten are entered in the contest.

- **Students and teachers use assessment to improve and adjust activities that best serve student needs.**

While reviewing his portfolio of artwork with his art teacher halfway through the first semester of eighth grade, Kevin finds that while his work seemed complete and well executed, he has not explored any new media or ideas. He admits that he feels stuck in the same safe format and style. The teacher suggests that he do several larger works in oil pastels instead of the small works with colored pencil that he has been doing and that he research the artwork of impressionists or post-impressionists, such as Van Gogh and Monet, to get a new perspective on the use of light.

Professional Practices

Teachers develop a long-range plan for fully implementing the visual and performing arts into the individual school-site program. To accomplish this, teachers:

- Refer to the *Handbook for Implementing an Effective Visual and Performing Arts Program* (Appendix V, page 69) for both short-range immediate action plans and long-range planning.
- Write a plan for including all four arts in the curriculum, either one discipline per year until all four are incorporated, or two at a time, or all four simultaneously.
- Survey the staff to find out areas of expertise, interests, and needs in the arts program.
- Involve parents and community artists and arts agencies in the planning process.

Teachers commit time to participate in a professional development program that focuses on visual and performing arts skills and knowledge. Support is given to teachers to:

- Attend the nearest California Arts Project institute.
- Participate in institutes which support ideas for curriculum integration, such as:
    - California History–Social Science Project
    - California Literature Project
    - California International Studies Project
    - California Writing Project
- Become actively involved in professional arts organizations, such as:
    - California Art Education Association
    - California Educational Theatre Association
    - California Music Educators Association
    - California Dance Educators Association
    - California Alliance for Arts Education
- Attend district, county, and statewide arts conferences and workshops.

- Enroll in relevant college courses to expand or refresh knowledge and skills in the arts.

- Establish arts alliances among teachers and faculty at institutes of higher education in order to regularly exchange current research and practices in arts education.

- Work with mentor teachers, district and local visual and performing arts experts, and peer coaches.

- Collaborate with local arts agencies in identifying artists to help extend educational experiences.

- Become familiar with materials in school and district library media collections.

In order to understand how students experience the arts, teachers experience and learn about the arts together. Teachers:

- Organize staff visits to or attendance at art galleries, plays, concerts, dance performances, lectures, and the like.

- Focus on one of the visual or performing arts of their choice to increase knowledge and competence in that discipline and to become more comfortable about including it in their curricula.

- Stay abreast of and participate in arts opportunities within the diverse community.

- Arrange for demonstrations and lectures by guest artists (e.g., musicians, sculptors, actors) and make provisions for both students and teachers to attend.

- Establish arts displays or an arts bulletin board in a central location to notify all who enter the school about school and community arts activities and classes.

- Arrange for displays of art or performances in the community.

Teachers provide time in the schedule for the arts and use flexible scheduling as a tool. They:

- Devise ways to integrate the arts into classroom instruction and plan how to teach the content, knowledge, and skills of each of the arts.

- Team teach or develop a rotation schedule in order to allow each teacher to provide instruction in the art form in which he or she has proficiency.
- Revise their schedules and exchange preparation times in order to release other teachers to observe arts classes or work with an arts mentor.
- Arrange their schedules to provide longer time periods for arts instruction, activities, and events.

Teachers work with school administrators to ensure that necessary resources are allocated for the visual and performing arts program. They:

- Consider budgetary needs, facility needs, personnel needs, and release time for the arts.
- Allocate funds to purchase materials for the arts program from the general school budget, School Improvement funds, fund-raisers, the P.T.A., community resources, and grants.
- Purchase materials and equipment necessary to improve the arts program, including art and music state-adopted textbooks.
- Provide funding for field trips to museums and performances and for bringing visual and performing artists into the school.

Teachers use community resources, including parents, in the visual and performing arts program. They:

- Arrange for demonstrations and lectures by guest artists (e.g., musicians, sculptors, actors).
- Provide time for artists-in-residence to work with students and do presentations for teachers and/or parents.
- Petition businesses to "adopt-a-school" for the arts programs.
- Enlist assistance from local businesses, parents, and arts organizations when organizing special arts activities and celebrations.

Teachers educate parents and the community about visual and performing arts. They do this by:

- Sending newsletters or including information regularly in the school parent bulletin on arts activities and benefits of arts; providing parent groups with information on the effects of the arts on students' education.

- Inviting parents to attend and participate in arts activities, such as a parent art docent program and field trips.
- Posting notices of art activities on school and community bulletin boards.

Teachers assess students and the program using a full range of current performance-based assessment techniques. They:

- Gather and talk about student work in the arts and evaluate all elements of their arts program on a regular basis.
- Become familiar, along with the administration, with performance-based assessment tools such as student portfolios, open-ended problems, and student projects or performances, and use these forms of curriculum-embedded instruction in their lessons.
- Collaborate with other teachers in the district to develop grade-level content standards and performance standards for the arts based on the *Visual and Performing Arts Framework.*
- Jointly observe student work and performances to establish scoring criteria or rubics, and use these to determine student knowledge and skills.

Visual and Performing Arts Resources

The following publications are available from the Bureau of Publications, Sales Unit, California Department of Education, P.O. Box 271, Sacramento, CA 95812-0271; phone: (916) 445-1260:

California Basic Instructional Materials in Bilingual Language Arts and Visual and Performing Arts—Visual Arts and Music: Adoption Recommendations, 1989

Instructional Materials Approved for Legal Compliance, published annually

Model Curriculum Standards for Visual and Performing Arts, Grades 9–12, 1985

Prelude to Performance Assessment in the Arts, 1994

Price List and Order Form for Art and Music Instructional Materials, 1990

Strengthening the Arts in California Schools: A Design for the Future, 1990

Technology in the Curriculum, Visual and Performing Arts Resource Guide, 1987

Visual and Performing Arts Framework for California Public Schools, Kindergarten Through Grade Twelve, 1989

The following publications are available as indicated:

Handbook for Planning an Effective Visual and Performing Arts Program, County / State Steering Committee, 1990. Tulare County Department of Education, Curriculum Services, County Civic Center, Visalia, CA 93291; (209) 733-6326.

The California State Board of Education Policy on Arts Education, 1989. Available from the History–Social Science and Visual and Performing Arts Unit, California Department of Education.

The following organizations can provide additional information:

California Alliance for Arts Education (CAAE), Al Muller, Chair, 4040 West Undine Street, Stockton, CA 95206.

California Art Education Association (CAEA), Gerald Scheib, President, 14059 Claywood Avenue, Sylmar, CA 91342.

California Arts Council, 2411 Alhambra Blvd., Sacramento, CA 95817.

California Dance Educators Association (CDEA), Conni Adams-Blackwell, President, P.O. Box 270, Waterford, CA 95386.

California Educational Theatre Association (CETA), Emmet Jacobs, President, 7541 Midfield, Los Angeles, CA 90045.

California Music Educators Association (CMEA), Bill Burke, Executive Director, 3924 Cottonwood Drive, Concord, CA 94519.

The California Arts Project, Glenda Gentry, Executive Director, Marin County Office of Education, P.O. Box 4925, San Rafael, CA 94913.

Instructional Support Criteria

The instructional support criteria were created to assist in the analysis of student work and to provide ideas for schools in designing strategies for improving their instructional programs. The criteria provide schools with a multitude of ideas, such as how the diverse needs of their students can be met, what or how they could change in the organization of their academic programs and their schools, and how teaching and learning occur. They also reflect the content of *It's Elementary!* and some of the restructuring concepts as they relate to a vision for improved student learning. Although these criteria contain most of the same messages and content of the former PQR "schoolwide criteria," they are reorganized and condensed.

Teaching and Learning in the Elementary Grades

Focus Statement

All elementary students are engaged in learning an activity-based, meaningful thinking curriculum, which views students as explorers and the creators of knowledge rather than as the recipients of facts and concepts organized in a predetermined sequence. The curriculum is balanced and includes language arts, mathematics, science, history–social science, visual and performing arts, health, physical education, and, where appropriate, instruction in a second language. The elementary program addresses the child as active, intellectually curious, and eager to learn about the world and the people in it.

Teachers, support staff, administrators, and parents share the responsibility of ensuring that every child succeeds in mastering a high-quality curriculum. All students have access to this curriculum, yet teachers acknowledge that students are at different developmental stages and that some may take longer and use different approaches to succeed in a thinking curriculum. Consequently, curriculum and instructional practices are varied in order to address the academic, social, and personal needs of each student, including students who are learning English, economically disadvantaged, underachieving, gifted and talented, of average ability, and those who are receiving special education services.

The school and the parents communicate frequently about the school program and how their children are performing at school. Parent participation in the learning process is actively solicited.

The Elementary Grades Learner

The elementary curriculum is designed to relate to the students' developmental stages, including the development of curiosity about themselves and the world in which they live. Young students' need to be active is recognized and addressed by the integration of activity-based learning into all areas of the school program and by the establishment of a rich, thinking curriculum.

Each student is given opportunities to express special interests and talents and to develop positive values and self-concept. A caring school community creates the bonding of students and their families to the school. The school provides a nurturing atmosphere so that each child feels a sense of belonging and can grow intellectually, socially, and emotionally. An atmosphere of care and mutual support helps all students feel a sense of belonging.

Exemplars

- *Young students' need to be active is addressed in part by student-centered learning activities, such as group projects, interactive journals, student-made test questions, or student-conducted surveys or polls. As part of a unit on dinosaurs, students, acting like archaeologists, dig buried chicken bones out of a tub of dirt. They measure the bones, identify them by using a chart, and do scale drawings of them. They talk about extinction and climatic change, discussing what is happening to our planet today. Students use a variety of information sources in the library media center, public libraries, and the like to research and present different theories about the disappearance of the dinosaurs.*
- *Students engage in meaningful learning activities on topics that are of interest to them. For example, during a math study unit focused on recess, students measure the play yard, count the number of students engaged in different activities, and learn how to tell time.*
- *In order to promote a nurturing atmosphere and help students developing English proficiency "bond" to their school, school personnel use the home language of LEP students in "official" settings and methods, such as school newsletters, announcements, and assemblies, and allow and encourage students' informal use and learning of their primary languages.*

Organizing the Academic Program in the Elementary Grades

A rich, meaning-centered, thinking curriculum is in place. It takes advantage of the children's natural curiosity and drive to help them make sense of the world around them. Moreover, the curriculum is balanced and includes an emphasis on all the content areas, including science, history–social science, the arts, and physical education—not just language arts and mathematics.

The thinking curriculum is characterized by activities that are challenging; self-directed and teacher-directed, as appropriate; authentic; collaborative; hands-on; and open-ended. Instead of a program that treats many topics superficially, and which is built on lecture-centered pedagogy and acquisition of skills out of context, the thinking curriculum calls for a program that emphasizes depth over breadth.

All staff members help students experience a clear progression in their learning from grade to grade so that students will understand how what they learn prepares them for middle and secondary school and beyond.

Because principles learned in teaching one area of a thinking curriculum transfer to the teaching of other areas, teachers start to deliver this type of curriculum by learning how to deliver one area of the curriculum consistent with the state framework for that area. In addition, teachers give credence to the interrelatedness of knowledge and concepts and provide more powerful learning experiences for elementary students by taking advantage of the natural connections across the disciplines. Teachers meet frequently within and across grade levels and disciplines and with instructional support staff to plan and discuss what they are doing and how to coordinate instruction.

Because the program engages students in meaningful, activity-based instruction that allows them to investigate topics in depth, extended blocks of learning time are required. School schedules reflect the need for these blocks of time.

Exemplars

- *Teachers work together to reduce the amount of skills-based instruction and assignments done out of context; e.g., spelling lessons generated solely from a spelling book, the learning of grammar as a subject in isolation from writing, and mathematics work sheets that require application of a single algorithm.*
- *Teachers, particularly those who specialize or "team teach," work together to coordinate their lessons. For example:*
    - *Fourth grade students studying California history read literature related to this history.*
    - *In a group discussion, kindergarten students create a Venn diagram depicting overlap between content in two versions of the same literature piece.*
    - *In a health lesson about the importance of getting enough sleep, students make a graph, using computer graphing software, of their classmates' various bedtimes and at the same time discuss the issue of sources of error in data collection.*

- *Faculty and staff help students develop senses of awareness of their futures. Elementary students are encouraged through unit activities, field trips, and video programming to think about and become aware of career possibilities.*

Instructional Practices

Teachers use a variety of instructional practices and flexible grouping arrangements that are appropriate to the structure and substance of what they are teaching. They adapt their instructional practices to the developmental characteristics of their students; that is, their students' need to learn in challenging ways, to engage in activity-based learning, and to construct new knowledge that builds on their existing knowledge. Teachers respond to students' linguistic and cultural backgrounds by providing differentiation in their instructional techniques, including appropriate instruction in English and students' primary languages.

The school and district provide special support to any student experiencing difficulty. If a student experiences difficulty in mastering a concept or skill, the teacher is quick to use new materials and strategies. In addition to differentiated instructional techniques, such early intervention measures as Saturday sessions, extended-day classes, and peer- and cross-age tutoring are all employed as necessary to ensure success early on and avoid later retention and remediation.

Instruction emphasizes the development of both academic and social skills that students need to be successful. Frequent collaborative learning opportunities are provided to supplement direct instruction. In these situations, students learn to work together to attain a common goal and to share with their peers their unique experiences, knowledge, and perspectives on the world.

The school has a comprehensive approach—both explicit and implicit—to educating students about values and character. The exploration of the moral dimensions of human behavior are vital within each of the disciplines. Teachers are caregivers, models, and mentors. Students care about each other and feel valued membership in and accountability to the school community. Parents, of course, are partners in values education because they are the children's first teachers.

Teachers use flexible and inclusive grouping arrangements to accomplish particular learning goals and to facilitate access on the part of all students to a thinking curriculum. Groups are created, modified, or disbanded as new learning needs arise. Ability grouping is the exception, not the rule, in the instructional day.

Teachers use a wide variety of technology-based materials to supplement print material. Careful choices are made in selecting these materials to ensure that their application is consistent with the goal of deepening student conceptual understanding in a thinking curriculum. They recognize technology as a potentially powerful teaching/learning tool and use it to simulate real-life experiences for the students, to foster thinking in problem-solving situations, to stimulate student creativity, to challenge and extend student thinking, to expose students to advances in the sciences and the humanities, and to provide them with experiences that would otherwise be too expensive or dangerous.

Teachers use a variety of formal and informal assessment procedures to determine and inform students of their progress in reaching desired outcomes and to help teachers identify which instructional strategies are the most effective. Assessment at the school is aligned with curricular goals and with the school's performance standards, and it and makes use of a wide variety of techniques which emphasize the development of in-depth understanding and higher order thinking skills as evidenced by students' abilities to write, solve problems, and engage in substantive conversation. Assessment resembles good instruction in that students are given ample time to perform tasks, the chance to use tools such as reference books, computers, and calculators, and the opportunity to revise their work or collaborate with peers.

Homework assignments provide opportunities for students to practice, extend, prepare for, and respond creatively to material covered in class; teachers respond promptly and clearly to students' work. Assignments challenge students to find original solutions rather than repeat correct answers.

Exemplars

- *The elementary classroom is marked by highly organized activity. A teacher works with one group of students, some of whom are reading while others listen. In other parts of the room, a group of students are holding a group conference in which they listen to and respond to each other's writing. In another area, a student is reading to a parent while an aide circulates, asking questions. An outline of the writing process is posted on the walls; reference books and technology-based resources are available for consultation. Later, the whole class will participate in evaluation of the day or activity, discussing what worked well and what else might be needed.*
- *Teachers challenge students by posing open-ended questions, challenging students' preconceptions, and leading students to analyze information to support a particular conclusion or generalization.*

- *Teachers use many forms of technology, both in classrooms and in the library media center, such as videotapes, computers, liquid crystal displays for use with overhead projectors, laser videodiscs, hypermedia, and modems, to extend and enhance learning.*
- *At the elementary level, ungraded classes provide a strategy for dealing with retention and acceleration of students.*
- *Teachers meet on a regular basis to examine portfolios of student work in order to assess and improve their instructional practices.*
- *In order to provide successful learning experiences for all students, teachers emphasize cognitive strategies such as organizing, questioning, manipulating, and interacting with information.*
- *Teachers modify assessment methods to incorporate more hands-on, reality-based performance tasks which measure student progress toward meeting the school's performance standards. For example, students might:*
    - *Chart or graph information in math.*
    - *Build a model of a structure or phenomenon, such as a cell.*
    - *Produce a history project based on oral interviews in the primary languages of their families.*
- *Homework assignments extend classroom experience and increase students' responsibility for their own learning process. Homework assignments:*
    - *Arouse curiosity, raise questions for further exploration, and foster self-discipline.*
    - *Give students a chance to test in practical ways the things they learn in the classroom.*
    - *Are responded to quickly and with clarity by the teacher.*
    - *Are coordinated among the curricular areas to make learning more meaningful.*
    - *Often involve parents in their children's learning.*
    - *Often require several days to complete.*
    - *Are not workbooks or ditto sheets with simple fill-in-the-blank, multiple-choice, or true-false questions.*
    - *Encourage students to explore related resources in the community, such as libraries, museums, and historic landmarks, to complete assignments.*

The Learning Environment

Focus Statement

The Learning Environment criterion supports, in several ways, the goal of excellence for all students in learning a rich, meaning-centered, thinking curriculum. The criterion promotes high academic standards and equal access to this curriculum for all students, and it describes the early intervention strategies, support network of academic and social services, special resources, and physical environment that are necessary for student success in this curriculum.

The school environment fosters high expectations for each student, and the adults in the school demonstrate a commitment to finding strategies and resources to realize those expectations. Student support services are designed to ensure that each student participates actively in and is successful in learning a rich, meaning-centered curriculum. A network of school, district, and community services gives all students a sense of connectedness to the school and contributes important resources to their health and to their academic and social success. The administrators and teachers readily enlist the support and active involvement of parents as partners in helping their students prepare for success in school, as productive workers, and as adult citizens.

All students have access to a challenging and meaningful curriculum as well as to other school activities that promote students' intellectual, ethical, cultural, emotional, and physical growth. Staff and students recognize and respect each other's achievements, personal accomplishments, and cultural and language diversity. Students and staff feel safe in an orderly environment that promotes pride and facilitates learning and that also includes a high level of congeniality among students and staff.

High Academic Standards for Every Student

Standards of academic performance that are in line with the state frameworks have been adopted by the school and are well known by students, faculty, and parents. It is apparent from the curriculum taught, instructional strategies employed, and school environment that all adults at the school believe that their highest priority is to take whatever steps are necessary for every student to meet these standards. No student, whatever his or her performance level, is denied access to the richness of the school curriculum.

The total school staff works together to ensure that every student has access to and participates actively in learning a rich, meaning-centered curriculum.

The guidance staff, counselors, categorically funded resource specialists, and community agencies work together and with teachers in a variety of supportive, preventive, and remedial services to provide students with the necessary advice and assistance in attaining their highest academic goals. All adults at the school—teachers, specialist staff, instructional aides, support staff, administrators, and volunteers—believe firmly in the ability of every student to be successful in school.

The entire school staff reinforces high academic standards and expectations for all students through school policies and procedures. For example, the schedule of the school day is a product of professional collaboration and reflects consensus among staff, students, and parents that academic achievement is the school's highest priority.

High academic standards and a belief that every student in the school should be operating at a level of challenge permeate the discussions in the school of student progress, decisions about placement, and the implication of those decisions for future academic and career choices. Because schools are aggressive in informing students and parents about the consequences of these decisions, parents are aware of the academic opportunities, course choices, and the consequences of academic decisions that are made. Careful placement practices keep open students' full range of future academic and career choices. Timely and regular opportunities are available for parents, teachers, guidance staff, and students to confer about students' progress, choices, and the possible consequences of their decisions.

Administrators, teachers, and guidance staff consider advisement an integral and essential part of their school program. Time is regularly scheduled for advisement. To the extent possible, all students participate throughout the middle grades in an advisement program, and there is an established curriculum with clear objectives mutually agreed on by the advisers. Administrators provide timely and helpful support to the advisers, including inservice activities.

Exemplars

- *Staff meetings are spent in collegial discussion on topics of curriculum and instruction. Teachers discuss instructional strategies and student progress both formally and informally. Collegial discussion is valued by the school and district staff as a source of support and information; it encourages faculty members to experiment and take risks.*
- *Flexible scheduling meets the needs of both students and teachers. For example, school ends at 12:30 p.m. twice a month so that teachers can meet to plan. Another*

example would be that teachers planning a science unit reschedule the instructional day for a four-week period in order to meet their objectives.

- *School staff, parents, and business leaders in the community work together to provide opportunities for middle grades students to apply knowledge learned in school to joblike situations, through such activities as student shadowing of business leaders, mentor programs, apprenticeship programs, and exposure to high-technology jobs.*
- *In order to emphasize the academic focus of the educational program, the school keeps classroom interruptions, such as public address announcements and visitors, to a minimum. Parents refrain from scheduling routine medical appointments during school hours and avoid taking their children out of school for family vacations.*
- *Teachers and counselors use information from the Home Language Survey and primary language assessments to place LEP students in appropriate learning settings. Instructional progress is measured through formal and informal means, including observation, proficiency scales, writing samples in the native language, and other procedures to ensure students developing proficiency in English are succeeding in an academically challenging curriculum.*
- *At the middle level, the advisement program includes a variety of activities: study skills, understanding of self and others, awareness of values, outlining, time management, and other information and activities as established by the school staff. Each student is well known by his or her teacher, and an adviser or other adult at the school is assigned to deal directly with the student's specific needs.*
- *Parents are actively involved in the academic counseling of their students, and there is frequent two-way communication between parents and staff (including Chapter 1 and other categorical program staff). Through regularly planned activities such as parent-teacher conferences, conversations with guidance staff members, schoolwide meetings, and home-school communications, parents know how their children are progressing and what courses their children should take so that no options are later closed to them.*

Early Intervention and the Support Network

A network of school and community services helps students attain their optimal academic, career, personal, and social goals and ensures that all students are challenged to experience, discover, and succeed in learning a rich academic curriculum. Faculty, guidance staff, support staff, and parents share responsibility and are proactive in identifying and meeting the needs of students at risk. These individuals, and indeed everyone at the school site, work together to help students attain satisfactory levels of achievement and to meet their special needs. At the earliest sign of difficulty, teachers confer with students to determine alternative strategies and materials and call on specialist teachers, counselors, school psychologists, and parents to join in finding ways to overcome the difficulty. The school also calls on community service providers, such as probation officers, public health nurses, youth service center staff, and suicide prevention centers, to join with the school in removing barriers to optimal student success.

No student experiencing difficulty is allowed to drift because of inattentiveness or inaction on the part of teachers or other staff. Moreover, the school uses a variety of techniques, including outreach, parent education, family services, and an attendance improvement system, to ensure that students are at school when they are supposed to be and receive follow-up when appropriate.

All adults at the school value parents' roles in student learning and the contribution they can make to the school program. Through ongoing communication, parents are kept well informed of their children's progress and have a clear understanding of their own roles in the educational process. Parents and family members feel welcome at the school and are comfortable interacting with faculty and support staff members. Parents who speak only languages other than English are provided with translators to assist with school involvement. Parents are encouraged to learn techniques that will help them assist in their children's learning in the home environment. They are involved in support roles at school and are encouraged to act as advisers and advocates, as well as to act as decision makers in the school governance process.

Students assist each other in succeeding in the academic and social realms of school life. Students are able to help each other overcome difficulties that prevent them from succeeding. The school encourages relationships among students of different ages by promoting cross-age tutoring, ungraded groupings, and other such strategies. Bilingual students act as tutors for LEP students acquiring English.

Community support services, including health support systems, social service systems, and cultural community services, form an integral part of the school's and district's student support system, and they contribute important resources that further the success of all students. The school maintains respect for and understanding of cultural traditions and practices related to health and individual dignity. No family with a child attending the school is left without support when the health and/or well-being of the child is threatened. If health problems or life circumstances pose a threat to a child's education, a liaison person at the school directs the family to appropriate support services, either within the school or in the community. Families whose members may have limited English proficiency, or who need an advocate to help them acquire available services, are taught by the school how to find social services in their community. The total school staff has the responsibility of establishing a preventive approach that helps students avoid or solve any problem that could impede their optimal academic, psychological, physical, cultural, or social development.

Exemplars

- *A student study team approach is used to ensure professional guidance and collaboration in addressing students' specific learning needs. Deliberate, affirmative, and serious efforts are made to assist any student at risk of not succeeding academically or socially in school through a variety of support services, including group and individual guidance, advisement programs, and school psychological services.*
- *Students experiencing difficulty in learning to read are provided intensive tutoring in languages they understand at the earliest sign of difficulty by certificated staff who are trained in teaching reading strategies; this tutoring accelerates students' learning so that every student becomes a successful reader and does not fall behind.*
- *Teachers communicate regularly with parents about each student's progress through conferences, home visits, and written materials in languages parents understand. They also provide regular information on such topics as science fairs, holidays, homework assignments, and special class projects.*
- *Teachers encourage parents to help their students succeed in school by visiting classes, becoming engaged with the students in homework activities, monitoring the use of television, and listening to and talking with their children. If the home language is not English, parents are encouraged to work with students in the home language.*
- *Parent organizations play an active role in the life of the school, sponsoring programs, raising funds, and drawing on the special talents and abilities of parents and community members for the benefit of the school. Language minority parents serve as resources to the school, as well.*
- *All students have scheduled access to school-related health support services. These services include:*
    - *Instruction in general health practices, safety, and first aid*
    - *Early identification of communicable diseases*
    - *Dental, vision, and hearing screening*
    - *Detection and referral of cases involving child abuse, substance abuse, suicidal tendencies, pregnancies, obesity, and other types of potentially life-threatening situations*
    - *Identification and linkage with community health agencies and services*
    - *Access to accurate and current information on health-related issues*

- *Districts collaborate with county health and social services departments to sponsor school-based counseling, tutoring, parent education, and social services referrals for students experiencing health or family problems which may interfere with learning. Ethnic and cultural agencies are included, when appropriate, as brokers of information.*

Equal Access and Special Resources

The educational practices and other activities within the school's and district's support system facilitate equal access and successful educational and social outcomes for students who are learning English, economically disadvantaged, underachieving, gifted and talented, of average ability, and receiving special education services. Students with special needs are given the resources they need without being removed for extended periods of time from the regular classroom. Physical and intellectual access to information is provided to all students on an equitable basis. School scheduling practices ensure maximum flexibility in providing students who need them with special programs that do not interfere with their full participation in the core curriculum. Coordinated early intervention strategies, extended learning day, student study teams, and vigorous outreach to involve parents and the community are used to support success on the part of students with special needs in the core program.

Students receive multifunded support from both general and categorical resources designed to increase students' success in a thinking curriculum. The purpose of categorical funding available to the school is to provide assistance to eligible students so that they can succeed and, as appropriate, excel in a thinking curriculum. Resources, including technology-based resources, are used to enhance instruction in the core subjects and to provide appropriate instruction for meeting the unique needs of students who have limited English proficiency, are physically handicapped, or who have other special needs. For students with high abilities, categorical resources should be used to extend, enrich, and challenge their learning.

Flexibility in the redirection of categorical resources and in the way instructional time is allocated provides special help for students who need it and additional challenge for learners with high abilities. Flexible instructional grouping practices give students who may be experiencing difficulty in learning a chance to develop social skills and to participate successfully in group processes and cooperative learning. Similarly, such flexibility can offer students with high abilities the chance to pursue areas of special interest or to extend the depth of their understanding in an area.

Exemplars

- *Instructional practices in schools with high concentrations of students in poverty reflect the students' need for acceleration, rather than remediation. Instructional settings and practices for these students are rich in experiences, technology, and materials that enhance the core curriculum. For all students experiencing difficulty in learning, the curriculum, instruction, and advisement are designed to help and enrich rather than remediate.*
- *Supplementary services for students who need extra help augment the regular program by providing more time for teachers to engage these students in learning the regular curriculum and by allowing the students to interact with the curriculum with greater intensity and through a variety of modes, materials, and equipment. All teachers use challenging strategies for all students. Some examples include:*
    - *Additional adult modeling of standard English and extra help for students who use nonstandard dialects*
    - *Extra support in the primary language and ESL in the regular curriculum for language minority students*
    - *English-language development and access to the core academics in students' primary languages are provided to all students who are developing English-language proficiency*
    - *Greater opportunities for participation in cooperative learning*
    - *More blocks of time beyond the regular school day to engage in curriculum-related activities, such as summer school programs, intersessions, and before-and-after school programs*
    - *Use of certificated staff to lower the adult/student ratio to allow intensive tutoring for specific objectives*
    - *Use of local culture and ethnic centers to amplify and extend learning in familiar environments*
    - *Greater use of manipulatives and hands-on activities*
    - *Shrewd use of a wide variety of audiovisual materials and technology to expose learners to new modes of learning or to allow more depth of conceptual understanding*
- *Cross-age tutoring is one method used to assist students in learning. For example, a second grader visits the kindergarten class to help students learn to read simple phrases or sentences, or an eighth grade student assists a sixth grade student in a class science project.*
- *GATE funds are used by a school for professional development for regular classroom teachers to allow them to differentiate the core curriculum so that learners with high abilities can be appropriately challenged.*

Diversity and Recognition

The school actively promotes recognition of and respect for achievement, cultural and linguistic diversity, and personal accomplishments. The cultural heritages of the student population are acknowledged, respected, and incorporated into the school's curriculum and activities. Teachers and other staff members believe that the diversity of cultures and languages at the school enriches the learning of all students. Teachers encourage students to respect their own views and those of others by promoting open-ended inquiry and thoughtful evaluation rather than "right" answers. Students are taught how to work cooperatively through task organization strategies, sharing strategies, and conflict resolution strategies; they learn how to work together in large groups of students with diverse ages, cultures, languages, skills, and talents, experiencing firsthand the democratic values of justice, equity, and fairness.

High standards of personal and social behavior are modeled and reinforced by teachers, administrators, staff members, students, and parents. The school actively encourages civility and discourages shouting, yelling, or "put-downs" of any member of the school community. There are rewards, recognition, and incentives for staff and student excellence in every area of the curriculum and other schoolwide activities. The school takes pride in its identity as a diverse community of learners with many different strengths and experiences. At both the formal and the informal levels, administrators, faculty, staff, students, and parents demonstrate by example, advice, and interaction their enjoyment of each other and respect for their common purpose of providing the best education for all students.

Each student feels safe and cared for at school so that he or she can devote a total effort to learning. Students expect their school experiences to be successful. They like school and look forward to being there each day.

Exemplars

- *Awards are given at several different levels of performance, providing all students opportunities for success and recognition.*
- *Throughout the school, student work is on display, and students are regularly recognized by the adults and by their peers for the work they have done and the efforts they have devoted to getting it done. Students are proud of their work and quick to point out these displays to visitors.*
- *Ethnic and cultural differences are respected and celebrated. Faculty members take responsibility for learning about the ethnic and cultural backgrounds of their students. Home visits help faculty learn more about the family backgrounds of*

students they see in the classroom. Parents and local cultural and ethnic groups are perceived as resources and support to the school.

- *In classrooms, hallways, and around campus, teachers and students interact with each other and with their peers in a friendly, respectful, and empathetic manner.*
- *Schools attempt to reflect the ethnic and cultural diversity of the student population in the school staff through their paraprofessionals, volunteers, and classified and certificated staffs.*
- *Students' academic achievement and excellent behavior in the Chapter 1 program are also recognized in the regular classroom and the entire school.*

Physical Environment and School Safety

School space is flexible in order to provide task specific areas for students, such as quiet reading and research areas, large-group activity areas, small-group activity areas, and productivity areas where students use technology-based resources for completing assignments. Teachers also have flexible space that can be used for reflective discussion about student learning, development of learning materials, and parent-teacher conferences.

Students and staff are free to learn and teach without the threat of physical or psychological harm. The school's physical environment facilitates learning and promotes safety, pride, order, ownership, and freedom from fear.

The school and its classrooms have a code of conduct that is conducive to learning and that is consistent and mutually agreed on by staff, students, and their families. Adults in the school model appropriate behavior which both demonstrates and results in an enjoyable, positive climate for learning. Students have a clear understanding of the standards of behavior for which they will be held responsible; discipline is consistent, reasonable, and appropriate.

Exemplars

- *The school is free of graffiti; all members of the school community take pride in the school's appearance and share responsibility for keeping the school and grounds free of trash and debris.*
- *Discipline procedures are constructed in stages to give students an opportunity to substitute self-discipline for teacher discipline.*
- *In the upper elementary grades, the student council develops a school cleanliness policy.*
- *The school, district, and community cooperate in crime prevention; policies and procedures are established for reporting all criminal behavior on campus to law enforcement agencies.*

- *Representatives from the police, fire department, traffic safety division, and child assault prevention department visit the school to make faculty, staff, and students familiar with their services.*
- *The school maintenance staff demonstrates friendliness and respect for the students and ensures that all indoor and outdoor facilities are safe.*
- *Cultural differences are understood and respected by all staff and students to minimize misunderstanding of behaviors.*

The Improvement Process

Focus Statement

The purpose of schooling is to prepare students to be lifelong contributing members of our democratic society and to be productive workers. Schools accomplish this by promoting, for all students, excellence in learning a rich, meaning-centered, thinking curriculum. The Improvement Process criterion is designed to assist the school in the process of self-examination and self-improvement so that it can continually improve the educational program as the student population changes, as more is learned about the teaching and learning processes, as instructional media improve, and as the economy requires changes in curriculum.

The improvement process is ongoing and brings the school community together to examine both how and what students at the school are learning and to compare this rigorous assessment with the vision for learning described in the state curriculum frameworks. The school community engages in a thoughtful examination of all practices and procedures used at the school and assesses their values in the context of its vision for agreed on outcomes for all students. Significant changes in the way a school goes about the business of education are considered in order to make student learning more effective.

In order to support academic improvement for all students, the school (and district) establishes priorities and makes commitments of time and resources to improve curriculum and instruction and to make appropriate changes in the learning environment. As the improvement process unfolds, its results are evaluated to make sure that planned improvements do, in fact, make a difference in what and how students learn.

A commitment to excellence in education involves collaboration, shared decision making, mutual responsibility, and teamwork at every level. Faculty, support staff, administrators, parents, students, and members of the community collaborate in developing a vision for learning. They recognize that the work of improvement is never finished, but requires continual assessment leading to the development of new strategies for attaining educational excellence for all students.

Where We Are and Where We Are Going

The school's commitment to improve the educational program is based on a clear, shared vision of what students should be learning, a thoughtful assessment of the way they are learning, and an honest effort to measure the reality against the vision. Faculty, administrators, support staff, students, and parents frequently discuss the nature of high-quality learning, as embodied in a thinking curriculum and as presented in the various frameworks and reform documents, asking how to make it a reality for every child.

Faculty discussions of student work and student performance on tasks which give information about achievement help teachers design changes in the school's curriculum and instructional program. Assessment measures that cause students to use what they have learned are used by the school. Results will inform the school community about what students know or don't know, what they can or can't do, and how well they are being prepared for the next level of education and life beyond high school.

Assessment is integrally connected with instruction. The focus is on ascertaining students' understanding and examination of their work, rather than "mastery" of concepts and skills. Many forms of assessment are used, including examinations of portfolios of student work, observation, interviews, and group work. Changing the methods of assessment from a reliance on true/false, fill-in-the-blank, and multiple-choice tests (which may reinforce the old skills-based curriculum) to a greater use of complex open-ended tests (which incorporate higher order thinking processes) will facilitate the transition to a meaning-centered curriculum, leading to significant changes in expected educational outcomes at the school. Language-appropriate assessment is conducted for *all* students regardless of English-language proficiency. Students who have greater language development in their primary languages are assessed in those languages to determine knowledge of the subject.

Exemplars

- *The school views the assessment process as an opportunity to reflect on student academic achievement, effective teaching practices, program strengths and weaknesses, and progress in implementing curriculum and instruction. All students are assessed using languages they understand.*
- *A complete analysis of how well students are doing at the school includes a variety of data on student achievement as well as classroom assessment. Language dominance of the students is considered as well. Meaningful student performance indicators include, but are not limited to:*
    - *Student performance on new, performance-based assessments that measure the whole scope of the thinking curriculum*
    - *CLAS results*
    - *Norm-referenced tests*
    - *Criterion-referenced and teacher-made tests*

  - *Group and individual grades*
  - *Portfolios and other collections of student work*
  - *Indicators on the school accountability report card*
  - *Student, staff, and parent surveys*
  - *Records of student/parent/teacher team conferences*
- *Some of the most common methods of authentic assessment, which are integrally connected with instruction, include:*
  - ***Portfolios**—Collections of student work may include writing, videotaped presentations, lists of books read, or test scores.*
  - ***Open-ended experiences in math**—Students are asked to solve problems that have more than one right answer and to explain their reasoning.*
  - ***Hands-on experiences in science**—Students are asked to use manipulation to show skills such as measuring and classifying.*
  - ***Performance-based activities**—Students create a play, speech, or video as a culminating activity for a particular unit of study.*
- *Students take initiative in selecting work for portfolios, in showing portfolios to parents, and, embedded into instruction, in leading peer editing groups and conferences with their teachers.*
- *The impact of curriculum and instruction on each student is assessed through analysis of individual portfolios which are used to store important information about the student's academic achievement. These portfolios follow students through their school years.*
- *Faculty discussion of student work provides an opportunity to determine the best measures of academic success, based on the kind of work students are doing, what they should be doing, and how well they are performing when they are asked to do quality work.*

Working Together for Change

Change depends on teamwork, both within the school and at the district level. Collaborative decision making is the norm among all groups at the school and within the district. The development of "teacher leaders" within the school and the process of collaborative decision making at all levels draws on the experiences and calls forth the expertise of both district and school staff members. Everyone connected with the school understands the school's unique circumstances as they participate in evaluation and planning activities to improve the way students learn.

Teachers play the lead role in determining changes in the curriculum and instructional practices. They are encouraged to work as teams, both within their own disciplines and with colleagues from related disciplines, to make decisions about curriculum and instruction, classroom management, and student services and to enhance their own continued learning. The school environment encourages risk-taking, change, and innovation. Teachers demonstrate their commitment to innovation and skill-building through their participation in professional development which provides them with resources to act as leaders in the change process.

The principal exercises leadership by acting as a facilitator in the exchange of information and decisions among the school staff and the school site council and by keeping the school focused on its vision of high-quality learning for all students and on what it takes to make that vision a reality. He or she encourages innovation by teacher teams and communicates regularly with school staff and parents regarding the school's agenda for improvement and the progress the school is making toward realizing that vision.

The principal aids in establishing new working relationships throughout the school community so that those whose efforts or support will be needed to implement decisions are included in the decision-making process. By making sure that all important constituencies—parents, community members, representatives of businesses and community agencies, as well as students and faculty—feel that their voices are heard, the principal takes the lead in building consensus about the school's vision. At every level, changes in the decision-making structure are determined by a shared vision of desirable educational outcomes for all students.

The principal and school staff facilitate the induction of new teachers at the school site in a variety of ways. Initially, new teachers, whether new to the profession or simply new to the school or district, are provided an orientation. Teaching assignments are carefully and thoughtfully made to ensure that new teachers have teaching loads and additional assignments which reflect their novice status; combination or special needs classes, extracurricular responsibilities, and multiple and difficult assignments are avoided if possible. New teachers are provided special professional development, including one-on-one support from a more experienced teacher or mentor at the school site who has been trained for this role.

School teams and leaders not only work together to address the school's improvement process but also forge links with other schools and communities facing similar educational challenges in order to benefit from the experience and expertise of others in the field and to share what they have learned with a broader educational community. The educational community includes the representative cultural groups and leaders of the community.

Exemplars

- *In order for teachers to take a lead role in determining changes in curriculum and instruction, and, thus, in the achievement levels of their students, they are given maximum control, insofar as state law permits, to determine how instructional time will be allocated or used among subject areas. Moreover, the schedule is flexible and easily modified to enable teachers to work with particular groups of students.*
- *Teachers meet often in grade-level and academic teams to discuss their students' work and to decide on instructional content and strategies. They share their good ideas and successful practices with each other, help each other refine their instructional skills, and share what they know about the developmental characteristics of the students in general and the way these characteristics affect the students' learning habits.*
- *The school's leadership team establishes and maintains a vision of the skills and knowledge students will need to be competitive in a modern, technological economy and to become productive citizens in a democratic and culturally diverse society.*
- *In schools with either a School Improvement Program or a School-Based Coordinated Program, the school site council facilitates the school's movement toward this vision by allocating available supplementary resources to improve curriculum and instruction. The school site council makes a concerted effort to seek on an ongoing basis advice, information, and data from other formal and informal school groups such as the PTA, the school leadership teams, the student council, and any other site advisory committees. All groups become part of the decision-making process and move toward the same vision of student achievement. The SSC understands the relationship among the various reform efforts and how* Caught in the Middle *and* It's Elementary! *serve as umbrellas for the various reform efforts.*

The Planning Process

The school improvement planning process becomes the means by which the school (represented by the school site council and the local governing board) establishes and records a common understanding regarding the educational strategies that will be implemented to support the highest possible levels of teaching and learning in the school. This process reflects the ongoing effort of the staff, administrators, and the school site council to establish priorities and to fund activities which lead to a change in the way the school educates its students. Participants in the planning process understand that they must think in both long-range and medium-range terms; that change takes time even though students' needs for high-quality education are immediate and pressing; that risk-taking and failure are necessary steps to success; and that they must set long-range goals while being flexible enough to adjust to changing situations and new information.

Making choices about priorities and allocation of resources to achieve desired student outcomes is at the heart of the planning process. Rather than trying to cover every contingency, the school allocates resources, including categorical funds, where they can be used most effectively; it does not simply divide them up so all participants in the planning process get a "fair share." During the planning process, budgets are developed which specify how all supplemental funds provided by special programs will be used, including the designation and use of pupil-free days. Schools retain flexibility in their budgets for supplemental funds so that they have funds available for and can give priority to allocations which support the improvement process.

Annual reexamination of student progress in achievement, new knowledge on the part of teachers, administrators, and support staff, and new approaches in curriculum and instruction suggest new emphases and areas of focus for the continuing process of improvement. The planning process does not result in a static product, but at its best it produces constant changes that reflect the best thinking, understanding, and experience of the school community.

Exemplars

- *The school's collaborative planning process results in the following:*
  - *Performance standards and expectations for student achievement and behavior are known and implemented throughout the school.*
  - *Curriculum, instruction, and assessment are in alignment in each curricular area.*
  - *Services for students with special needs are coordinated with the students' regular instructional and counseling programs through collaborative efforts of the faculty members serving those students.*
- *The school uses the results of its PQR to establish improvement strategies and to justify expenditures of the school's supplemental resources.*
- *Allocation of resources is flexible, allowing the school to meet new contingencies as they become apparent in the self-review process. At least one-third of the school's discretionary or categorical program budget is "left flexible" for nonrecurring costs so that the school can pursue new strategies. Over time, the portion of the budget allocated for nonrecurring costs increases.*
- *The school site council views School Improvement money as a resource to fund the improvement process—not simply as a resource to be added to the base funding of the school.*

- *The school uses its categorical funds in the planning process to ensure that the students targeted by these funds have access to rich, meaning-centered curriculum and instruction. For example, Chapter 1 funds are used to pay for release time for Chapter 1 teachers to meet with other teachers to discuss student work portfolios.*

Professional Development

The primary purpose of professional development is to improve teachers' skills and knowledge and to bring such improvements into the classroom to improve teaching and learning. Everyone in the school community understands that professional development is a long-term commitment which sometimes requires teachers' absence from the school site. The district, school, and parents share the responsibility for supporting long-term professional development activities because they recognize the impact of these activities on student learning.

Resources for professional development, which include professional associations, professional literature, and discussion groups, as well as workshops and institutes, empower teachers by providing both personal and professional growth. Teachers learn new pedagogies through subject-matter-specific professional development activities and ongoing "craft" support. Teachers learn content-appropriate pedagogy and strategies, including the use of technology, to help *all* students, particularly those with cultural and linguistic diversity, master a thinking, meaning-centered curriculum.

In addition, new teachers engage in professional development seminars or coursework tailored to their specific needs, particularly in classroom management, time management, student discipline, and the teaching of students with diverse needs and skills. As new teachers develop and improve their skills, their need for specialized activities in professional development diminishes.

Staff and administrators allocate generous amounts of time, resources, and funds to professional development (especially for release time) as a major strategy to improve student learning. This helps ensure that all students, particularly language minority students, low-achieving students, or students at-risk, have access to and can succeed in a thinking curriculum.

Expertise in teaching is acquired over time; consequently, planning for professional development allows for activities of depth and duration and includes sufficient follow-up, support, and coaching. Teachers demonstrate a schoolwide sense of leadership by taking an active role in planning and implementing professional development activities. They take the lead in improving the school in the areas of curriculum and instruction and work to empower themselves and their colleagues by sharing advice, expertise, information, and innovation.

The school's professional development activities are carefully chosen as the most powerful next steps toward implementing the school's vision of learning for all students. Professional development activities reflect priorities developed during the self-review process. The school relies on local and state initiatives and improvement efforts as well as on state curriculum frameworks and curriculum guides as important resources for determining professional development priorities.

Exemplars

- *The school staff relies on both internal and external resources for professional development. Internal resources can include expertise offered by lead teachers within the school. External resources can include the California Subject Matter projects, consultants, and research.*
- *A significant portion of the school's budget is allocated for subject-specific professional development activities that support the improvement process. These include release time for teachers to plan or participate in training activities, payment for consultants or trainers to work with faculty over extended periods of time, and attendance at summer or intersession curriculum institutes.*
- *In implementing a comprehensive professional development program, the school utilizes funds from all available programs in the school—for example, SIP, Chapter 1, state compensatory education, LEP, and GATE—to ensure that all staff who work with students targeted by these funds can continue to build their knowledge and skills so that these students can succeed in the regular curriculum at the school.*
- *Those who conduct professional development programs use effective teaching practices, including modeling, coaching, guided practice, peer observation, support, and assistance, and follow-up support for staff.*
- *Staff, including those who work in categorical programs, are directly involved in planning and evaluating professional development activities. Evaluation results are used to design or redesign professional development activities and to determine what activities merit the most support.*
- *It is evident through classroom observation and from talking with staff members that they are using information and techniques which they learned through professional development activities.*
- *Staff schedules permit ample time for observing, discussing with colleagues, exploring strategies, learning how to use new technologies, and planning and reflecting on how best to improve curriculum and instruction.*

Teaching and Learning for Second-Language Learners

Focus Statement

A strong academic program for second-language learners ensures that each student is placed in a learning environment in which the choice of the language of instruction, the nature of curriculum and instruction, and the student's knowledge combine to promote academic success. Student outcomes, curricular objectives, instructional practices, and forms of assessment are appropriate for the different language proficiency levels of the learners. Teachers recognize the interactive and creative nature of language acquisition and how to use the interaction of language learning to provide interesting and challenging instruction.

High performance expectations are held for all students in all curricular areas. Curriculum and instruction for second-language learners provide academic content at a level equal to that provided for their native-English-speaking peers. Students achieve academic excellence in their primary languages or in English at levels equal to the achievement levels of native English speakers. The ultimate goal of the program is to raise the student's academic performance to the highest levels of excellence in English and the primary language.

A key to academic success is the development of each student's self-confidence and feeling of membership in the school community not only during instruction but also in all school activities. This involvement in the community is directly related to the community's acceptance and validation of the culture and experiences the student brings from home. The teacher identifies and builds on the competence the student already has in the primary language and the cultural experiences the student brings to the learning situation. Positive interaction between staff and students through the students' primary languages demonstrates that the status of all languages is equal in the school community.

The school community values bilingualism among students and staff. The contributions of diverse linguistic and cultural groups to the community and the school are recognized and appreciated. Language and cultural diversity are highly regarded as evidenced by the use of several languages and a variety of cultural information in community activities and learning experiences in the classroom. Because of the strong positive correlation between bilingualism and academic success, the school provides the opportunity for all students to become bilingual.

The Second-Language Learner

Students whose primary language is not English are likely to differ from each other in many important ways, even within the same language group. Students who are learning a second language exhibit the same wide range of learning styles and development of physical and social abilities as do native English speakers. Characteristics such as the student's literacy and academic knowledge in the primary language, prior schooling, age upon enrollment, language used in the home and community, and other ethnic and cultural variables are critical factors in the development and delivery of curriculum and instructional strategies used with second-language learners in the school.

School academic and social activities are structured to engage second-language learners. Second language learners make positive contributions and participate as members of the school community. These students are recognized for mastering a second language and are appreciated for the time and effort they have spent to achieve a level of proficiency which supports academic success in the second language. The staff recognizes that current research indicates that it takes five to seven years for students to become proficient enough in a second language to succeed academically in that language. Staff take this into consideration when planning curricular content and instructional strategies.

Exemplars

- *Alejandro and April, third grade Spanish-speaking bilingual students, actively participate in class in preparing a presentation for the school assembly on famous people. The class chooses Diego Rivera, a famous Mexican muralist. Alejandro and April paint large murals with other English-speaking classmates which depict phases of Diego Rivera's childhood in Mexico. The remaining students prepare a choral reading in Spanish and English, and the entire class presents it at the assembly.*

- *Guillermo and Yesenia, who are learning English, select "If You Give a Mouse a Cookie" for recreational reading. When they are comfortable with the story, they read to younger K–1 buddies, Brittany and Kyle. This situation also occurs with English-speaking students acquiring Spanish. Megan and Miya select "Los Tres Cochinitos" for their recreational reading and read to their K–1 buddies, Ramiro and Lucia. In this way, students increase their second-language proficiency, and the use of both languages is reinforced.*

- *Chan, a newly arrived student from Korea who speaks no English, contributes to a classroom newsletter by dictating a story in his primary language about how his family arrived in this country. He dictates to Sunee, a bilingual student who* *can write in both languages. Later in the week, Chan and Sunee tell the story to their class in a dramatic presentation of the story.*

- *Students who are learning English and their families work together on tape recording or writing family stories and books in English and in their primary languages. These works are published and displayed in the students' classroom and the school library. These family stories and books are shared verbally in the classroom with other students and shared with other parents in evening parent training meetings. In this manner, English-speaking students learn about other cultures and students learning English increase their language proficiency in English while working with their families.*

- *Alberto and Maria, parents of two second-language learners, are encouraged by the school to speak, read, and write in Spanish, their primary language, at home so that they can communicate most effectively with their children. The parents are encouraged to use Spanish at home, but to increase their English-language proficiency as their children learn English, the parents check out bilingual books and bilingual tapes with books from their school media center. On Wednesday evenings, parents learning English are invited to a group meeting in the school media center to share information and reinforce the use of the books and tapes.*

- *Evening Family Math, Family Science, and Family Literacy programs, presented in appropriate primary languages or in English with bilingual translators attending, are scheduled several times a year at Hoang's school. Hoang and his parents attend the sessions and participate at home in math, science, and literacy activities that are specially developed for them.*

Assessment

Assessment is an advocacy-oriented process; that is, it identifies a student's strengths and learning needs for use by the teacher in planning an academic program that best suits the student, rather than fitting the student to an existing program. Thus student assessment information drives the student's academic program. Formal and informal assessments of student learning are done either in the student's primary language or English, or both, depending on the student's level of English-language development and the language of instruction. When the student's content knowledge is assessed in his or her primary language, regional and nonstandard variations of the primary language are accepted and valued. Teachers gather the majority of assessment information themselves in order to use this information for planning appropriate instruction. The district assessment program is designed not only to meet state and federal reporting requirements but also to provide meaningful feedback to the classroom teacher for instructional purposes.

Appropriate assessment procedures include analysis of portfolios, observations of student performance on authentic tasks and in dramatic presentations, interviews with the students and their parents, records of student work on illustrations and on multimedia projects, and other forms of authentic assessment. These samples of work provide a wide range of evidence of learning. These procedures are particularly valuable when assessing a student's performance in his or her second language. The school site leadership team develops a plan during their Program Quality Review (PQR) process to collect and analyze student work from all students, including second-language learners.

Pertinent information, such as the language used for content area instruction and students' language proficiency levels, is included in the information used in analyzing student work. Samples of student work collected to analyze student learning at the school as a whole reflect the demographic make-up of the school community and the representative language levels.

Scoring rubrics used by teachers and other school site staff for assessing content knowledge in the student's primary language are equivalent to the rubrics used in English for assessing the content knowledge of native-English-speaking students. The only difference is the language in which each rubric is written. Descriptors of performance at each level of the rubric are parallel and equal in expectations. For example, a rubric for history–social science content is expressed in English and Spanish, but the performance expectations are the same. Performance levels of second-language learners are regularly compared with those of their native-English-speaking peers to check for equal levels of achievement.

The interaction between language learning and content learning is a natural, ongoing process. When students begin to express content understanding in English, developmental patterns of language expression are observed. Written proficiency in English is evaluated according to the student's developmental level. When fluency is achieved in English, then the rubric used with native-English speakers is applied.

Exemplars

- *Don Pedro Middle School contacted several community programs, such as La Raza and the United Cambodian Center, to hire bilingual assessors to administer the primary language assessment in the students' languages. The assessors are trained in a county-sponsored program to administer primary language assessments. The dialects of the assessors and of the students are considered as the two are matched.*

- *Teachers at Devon Elementary School meet to score writing samples collected from their students. They discover that writers in English and writers in Spanish achieved comparable scores on the district scoring rubric. This rubric was applied in the language in which the writing sample was written.*

- *Dimitri, a seventh grader recently arrived from Ukraine, tells a story about his family's arrival in this country. He explains his story sequence picture chart and written story in Russian to Mrs. Romanoff, an elder from the local Russian Orthodox Church. Dimitri's counselor contacted the church for assistance shortly after his arrival. Mrs. Romanoff explains in English the content of Dimitri's story to the teacher so that the teacher can assess Dimitri's proficiency in language arts.*

- *Raul writes in Spanish and Leia writes in English. As part of an assessment activity in the classroom, the students are responding to a writing prompt about a special person in their lives. Each student displays a logical sentence order, makes few mechanical errors, and uses clear descriptors in his or her writing samples. Raul and Leia both receive the same rating when the writing samples are scored using equivalent rubrics in Spanish and English. Nai, a second-language learner at the intermediate fluency level of English-language development, writes on the same topic. Her sample is evaluated using the same rubric in her primary language. Nai's writing sample receives a lower score, which indicates she is showing some use of conventional spelling, pronoun/verb agreement, complete sentences, descriptive vocabulary, and appropriate development of character and content ideas.*

- *At Potrero Elementary School, student portfolios are kept to enable teachers and students to look at student growth over time. Chin, a fourth grade student, has elected to make monthly entries in his personal journal in Korean to reflect on his writing fluency development. Drafts and final published classwork in Korean also document his literacy development.*

- *At Green Trees Elementary School, the Vietnamese primary language assistant explains the social studies assignment in Vietnamese to three recent arrivals, Tuyen, Lee, and Thinh. They write their assignment in Vietnamese. The assistant translates their work into English for the teacher so that an assessment can be made.*

Organizing Instructional Services for Second-Language Learners

When schools design instructional services for second-language learners, the focus is on a demanding curriculum and powerful instruction for the students. A clearly defined assessment procedure that measures a student's language proficiency and academic achievement in the primary language and/or English, coupled with staff resources and other school resources, determines the most feasible and effective specially designed academic services for students. All adults that work with a given student coordinate their efforts formally and regularly to provide the student with the most powerful and coherent instruction.

The instructional services for second-language learners ensure academic, cognitive, and social competence in two languages. The use of the primary language for instruction is seen by staff and parents as essential for building a solid foundation for learning for second-language learners. As the student develops proficiency in English, the time spent in primary language instruction decreases and literacy in English and content instruction in English increase; however, primary language instruction continues. The bilingual program parallels the regular educational program using two languages instead of one as the vehicles for providing a rich curriculum and effective instruction.

The ultimate goal for second-language learners is to reach the highest possible levels of student performance in the various subject-matter disciplines, using both English and their primary languages. Staff strengths and school and community resources are used to provide the highest quality bilingual academic program possible to students.

At school sites where there are multiple language settings or few second-language learners, and limited resources to deliver primary language instruction, the focus is on providing students with linguistically appropriate instructional services in English, with support in their primary languages. The instructional services for second-language learners consist of a variety of English-language development instructional strategies and support in their primary languages provided by peer tutors, paraprofessionals, and parent volunteers. Included are instructional support materials. These instructional options are used to provide English learners instruction in the core curriculum while the school is moving toward a fully bilingual program. The staff successfully organizes and promotes support and development in primary languages outside the school. Instructional services for second-language learners are planned, implemented, and evaluated by the entire staff as a collaborative team process.

Exemplars

- *Staff at Washington Elementary School have gathered the assessment data on all their English-language learners to determine needs for English-language development. The assessment data include primary-language proficiency and academic achievement in each content area. Teachers at each grade level look at these data and identify the need for primary-language and English-language development and specially designed academic instruction in English. Each group of grade level teachers describe the bilingual/English-language development instructional program to the total staff and match teachers' strengths and expertise to provide the needed specially designed academic instructional services. Teachers' strengths in content areas, their bilingual abilities, and their training in second-language instructional approaches are all considered in planning.*

- *Staff at Martin Luther King Middle School have gathered assessment data on all their English-language learners to determine needs for English-language development and curriculum content learning. The assessment data include primary language proficiency and academic achievement in each content area. Representatives from all the school's teams look at these data and identify the need for primary-language instruction, English-language development, and specially designed academic instruction in English. Second-language specialists meet with the team representatives to plan a complete set of course offerings through careful scheduling. A full range of specially designed instructional activities is available to meet language and academic needs of English learners. For example, a credentialed bilingual teacher responsible for teaching English-language learners teaches three sections of eighth grade United States history and two sections of seventh grade world history in the primary language for beginning second-language learners. A language development specialist teaches three sections of English-language development. All staff within and across instructional teams meet regularly and coordinate their work in order to maintain a coherent program for students. The bilingual program parallels the regular educational program, using two languages instead of one.*

- *Valley Elementary School has formed a partnership with the Chinese language heritage school in their community. Valley School invites the teachers from the language heritage school who provide Chinese lessons on Saturday to participate in their professional development sessions to promote inclusion of key concepts from the core curriculum in the language heritage school curriculum.*

- *At Lincoln School, 15 languages are spoken by students. Students who are at the early stages of learning English are grouped in classrooms to form primary language clusters of students who speak the languages and who have comparable proficiency in the primary languages as determined via assessment. A Vietnamese primary language assistant gives students assistance in the content areas in* *their primary language. The assistant and classroom teacher, who is in training for a bilingual credential, use weekly planning time to outline instruction in core subject areas and to determine how the assistant will work with students in small groups to preview, review, and reinforce the teacher's instructional activities.*

- *Union School has a large number of second-language learners representing a variety of primary languages throughout the grade levels. Teachers certified by the language development specialist are assigned as regular classroom teachers in each grade level to teach English-language development to limited-English-proficient students. The teachers use an English-language development framework developed by the district. The fourth and fifth grade second-language learners thus receive instruction in content areas within the regular classroom from their specialist-certified teachers, who use specially designed instructional strategies in English. Assignments often require that students use their primary languages outside of school.*

- *At Sanchez Elementary School, there is a need for bilingual staff throughout the K–6 grade span. The majority of second-language students are enrolled in grades K–3, with small numbers of newly arrived students in grades 4–6. The school has only three bilingual certified teachers and three teachers who have completed training and been certified to be language development specialists. The faculty, in conjunction with site administrators, is collaborating to expand services to all the second-language learners in grades K–6. Some of the options they explore are teaming a bilingual teacher with a specialist-certified teacher to form combination classrooms in which teachers can offer instruction in both the primary language and English-language development; mixing English learners with English-only students for 20 percent of the instructional day; and forming K–2 classrooms staffed by bilingual credentialed teachers. The site leadership team is monitoring a plan to acquire more bilingual staff and volunteers.*

- *At Chavez Middle School students from various language backgrounds arrive with excellent academic preparation in their primary languages while others arrive from war-torn countries with minimal primary literacy because of interrupted education. High-level academic courses plus initial native language literacy courses are offered in conjunction with English-language development classes.*

- *At Howard Middle School, second-language learners receive language and content instruction according to their levels of English proficiency. Students move through classes at the beginning, intermediate, and advanced levels of instruction according to their proficiency. Because the students have diverse primary language backgrounds, they are taught by a team of teachers who are experienced in teaching language acquisition through integrated content and hold appropriate Commission on Teacher Credentialing authorizations. The* *team of teachers, who share a common prep period and have weekly team meetings, include core teachers (language, history, science, and math), bilingual teachers, and the librarian. Teachers use strategies for second-language acquisition, such as cooperative learning and activity-based instruction. They also use level-appropriate, language-appropriate materials to promote success and raise students' self-esteem. Through the integrated curriculum, students have access to the same culturally diverse curriculum offered to all middle school students. Second-language learners and middle school native English speakers are held to the same high standards.*

Instructional Practices

The district's core curriculum is accessible to students regardless of their language proficiency. Ideally, the core curriculum is learned through the student's primary language until the student can profit from instruction delivered mainly in English. After English proficiency has been acquired, development and maintenance of the primary language is continued formally at school with home and community assistance.

Where content cannot be delivered in the primary language because of multiple languages or shortages of qualified bilingual teachers, teachers tailor their instruction to ensure that second-language learners have access to the same rich curriculum content as their classmates. For example, the teachers use basic content vocabulary, concepts that can be easily contextualized, hands-on learning, and reinforcement using different learning modalities.

It is also critical that students acquire English in a planned, sequential program of English-language development. The district has developed an English-language development framework based on state guidelines for teachers to use. The instructional activities in the English-language development classrooms should use the framework as a guide to plan activities that meet students' needs and ensure that students increase their English-language proficiency.

Students are actively involved in meaningful learning activities that are relevant to their lives. Frequent opportunities for cooperative learning with primary-language-speaking peers and English-speaking peers are provided. Additional teaching strategies for English-language development include cooperative learning, whole language, natural approach, authentic literacy events, literature-based instruction, language experience, interactive learning, and role-playing. Students acquire proficiency in English and gain content knowledge at the same time. In designing learning experiences, the teacher, however, focuses attention on either English proficiency or content knowledge at a given time.

Once students achieve intermediate fluency in English and basic literacy skills, specially designed academic instruction in English is provided for each student based on his or her needs. The objective for students of intermediate fluency is for them to have access to the core curriculum while they develop English-language proficiency. Instruction in English is built upon four major foundations: prior knowledge, contextualization, attention to the affective domain, and use of assessment data in instruction. Instruction in the primary language continues at the same time.

Teachers participate in an ongoing process of accumulation and selection of culturally relevant and linguistically appropriate instructional materials written in the primary languages represented in the district. Materials include textbooks and trade books, audio- and videotapes, computer software, CD-ROM with various tracks, and other multimedia technology. Instructional materials are aligned with the state curriculum frameworks and the district's core curricula. They are purchased as part of the district's regular textbook adoption process. This process includes all content areas and English as a second language. Bilingual teachers are represented on the textbook adoption committees.

Exemplars

- *Mrs. Sampson has organized her fifth grade class into several groups; one or two bilingual students are in each group, along with at least one student with more limited English proficiency. After studying the events that led to the American Revolution through film, realia, and books, each group chooses one of the following topics to present what they have learned through a five-minute skit: the Stamp Act, the Tea Act, the Boston Tea Party, the first Continental Congress, and the first shots fired at Lexington and Concord. Wan, who is a second-language learner, is grouped with two bilingual students who collaboratively coach each other to perform the roles of the participants in the Boston Tea Party. Students are encouraged to use their primary languages in the group discussions and preparations.*

- *Parents and community members enrich instructional material by developing multilingual cards that describe learning tasks to students in mathematics, science, and history–social science. At Parent Literacy Night, fourth grader Marcos and his parents prepare a deck of task cards in Spanish, while Duy and his family prepare a similar deck in Vietnamese.*

- *At San Miguel School, parents and staff participate in a review and selection process to establish a core literature list in Spanish. Copies of proposed titles are grouped together in the school's library and are available for review by staff and parents unable to attend scheduled meetings.*

- *The second grade at Copa de Oro Elementary is studying the unit, "People who Supply Our Needs." The three second grade classes have visited a local sweet potato farm and packing shed to better understand producers and consumers, the interdependence of people, the work they do, and how geography determines the kinds of crops raised and transported. After the visit, Ramon interviews his parents to obtain information about their jobs in the grape harvest. He draws and labels two posters which illustrate the work in a cannery; he draws another poster showing how the grapes get from field to market. Connie, an English-speaking student in the next classroom, chooses to write a short report about the workers and tasks necessary in getting sweet potatoes from the field to the grocery store and finally to the Thanksgiving dinner table. In a third classroom, which contains a number of second-language learners, the teacher has displayed and discussed flow charts and posters to review field trip events. Through role-playing, students demonstrate some of the tasks and activities of workers. From these posters and the experiences, the students write short reports. Afterward, Mai Lee, a Hmong student, interviews her Hmong-speaking parents regarding their work in a food-processing plant; she records their responses in English.*

- *Jose is a fluent-English-proficient eighth grader who no longer needs to receive content or language arts instruction in Spanish. However, he receives instruction in his U.S. history course in Spanish in order to develop and maintain his primary language. Also, he and his other bilingual classmates assist the sixth grade bilingual teacher by tutoring small groups of students in Spanish.*

- *At Santiago School, the teacher asks several students who went to the circus to dictate their experiences at the circus to her in English. She writes their dictations on a language experience chart. Subsequent choral reading, sentence-strip sequencing, and book-making activities reinforce language development and literacy skills.*

- *In a Spanish-as-a-second-language lesson, children play "Simon Dice" in Spanish with their teacher. The winner of the round becomes "Simon" the next round. Students play their roles in this familiar game and draw pictures in their classroom to depict the game. Students use Spanish in the role-playing and in their descriptions of their pictures.*

- *Intermediate level students who read proficiently in their primary languages participate in reviewing, critiquing, and rating a wide selection of primary-language literature. Multiple copies of highly rated titles are purchased for voluntary reading to help students increase their language proficiency and to encourage pleasure reading.*

Professional Preparation and Development

All staff participate in an ongoing and dynamic professional growth program to help guarantee quality instruction for second-language learners. The program includes time for peer coaching as well as scheduled opportunities for collegial discussion and implementation of knowledge and techniques. Professional development in language acquisition for staff contributes to second-language learners' successful access to the district's curriculum. As a result of this well-planned professional development program, staff feel competent in designing and implementing an effective academic program for students with diverse language and cultural backgrounds. Teachers work together to increase their proficiency in collecting and analyzing work of second-language learners. Specific professional development opportunities with assistance from outside consultants are made available to the school staff. A professional development program promotes site-based decisions and teacher-specific decisions on specific activities that will move teachers and students toward higher performance. This program is in concert with the district's established goals for professional training for teachers. Identification of specific training needs is based on community input, as well as language, cultural, and curricular needs for improvement. Both the district and community demonstrate firm commitment to the professional development of teachers by providing adequate time, funds, and resources.

Each school with second-language learners works with district-level personnel in a planned program for the recruitment, selection, and training of staff to ensure qualified, well-prepared, and properly credentialed teachers. In addition to being highly skilled and knowledgeable about the content they teach, ideally school staff have attained the following:

- Demonstrated proficiency in spoken and written English
- Oral and written proficiency in a language other than English
- Knowledge of theory and research on second-language acquisition
- Knowledge of assessment in primary and secondary languages
- Ability to use effective second-language teaching strategies for English language development and subject-matter instruction

- Understanding of how bilingual, English-language development, and mainstream instructional programs can work together within a school for the benefit of students

Exemplars

- *At Roberts School, the bilingual teachers, paraprofessionals, and other teachers serving second-language learners meet bimonthly to coordinate and implement new techniques. One meeting is devoted to the discussion of appropriate literature selections in Spanish presented in a previous seminar involving whole language. The literature selections are chosen to enhance and support the thematic units across the curriculum.*

- *During intersession, Summit School offers a five-day, college-credit class for all staff to learn about the culture, language, and history of the Hmong population. Among the presenters are a Chinese professor from a Bay Area university, the district's Hmong community liaison, and a Hmong professor from the local community college.*

- *During the monthly meetings of the Chinese Literature Club, teachers of Chinese-speaking students meet to discuss a variety of literature in Chinese. Approximately ten books are reviewed each time, with the aim of enriching and expanding the district's literature resources and increasing the teachers' Chinese fluency and knowledge of Chinese literature.*

- *A bilingual mentor teacher coordinates a staff development program through which new teachers and paraprofessionals learn about the various cultures represented in their particular school. Teachers engaged in this program receive credit toward their credentials, and paraprofessionals receive career ladder credit.*

- *Teachers of second-language learners from various schools meet monthly in study groups to discuss articles in professional journals and newsletters from a variety of bilingual professional groups. The activities assist them in relating theory from the articles to their instructional practices and curriculum.*

- *Sunnyview School lengthens its instructional day four days per week, allowing for one shortened day. The shortened day allows teachers, bilingual resource staff, and paraprofessionals to collaborate across grade levels and tracks. The meetings provide all staff serving second-language learners an opportunity to process and incorporate into their classroom instruction information gained from previous professional development experiences. For example, at a meeting, the staff discusses how to group second-language learners to allow them to* *participate meaningfully in a series of science experiments planned for a major unit on energy.*

- *In a K–6 school, all 18 classroom teachers, each with varying proficiency levels in Spanish, participate in a series of in-service sessions on second-language acquisition and specially designed academic instruction in English. This ongoing training further enables these classroom teachers to participate in a team-taught, second-language program. Monolingual English teachers provide the specially designed academic instruction, while bilingual teachers provide primary-language instruction.*

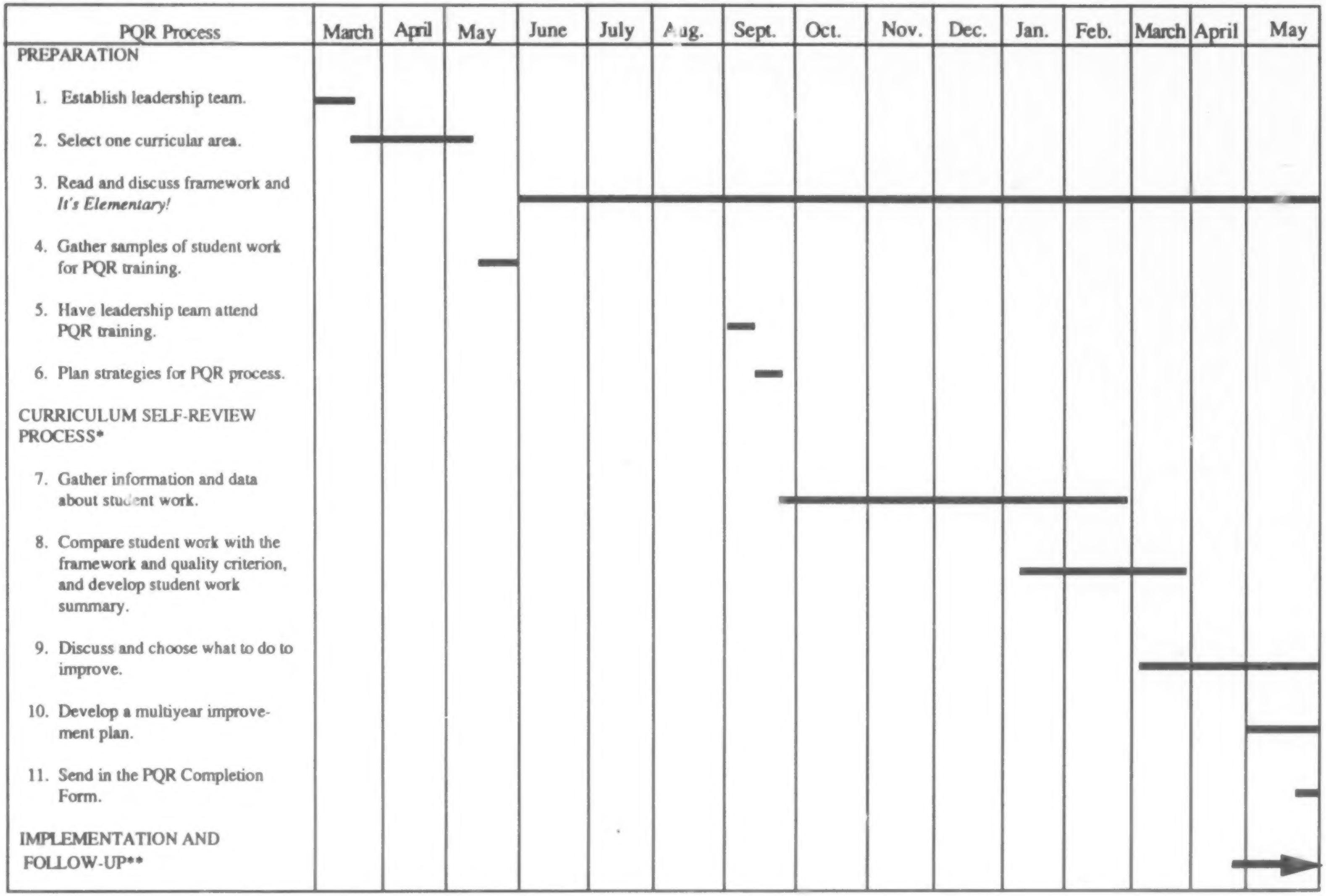
PART III

SAMPLE PRODUCTS

Part III is intended to provide *samples* of various formats. These samples were generated by schools involved in the 1991-92 and 1992-93 PQR pilot projects.

SAMPLE I

TIME LINE FOR PQR PROCESS
EINSTEIN ELEMENTARY SCHOOL (1992-93)



PREPARATION

1. Establish leadership team.
2. Select one curricular area.
3. Read and discuss framework and *It's Elementary!*
4. Gather samples of student work for PQR training.
5. Have leadership team attend PQR training.
6. Plan strategies for PQR process.

CURRICULUM SELF-REVIEW PROCESS*

7. Gather information and data about student work.
8. Compare student work with the framework and quality criterion, and develop student work summary.
9. Discuss and choose what to do to improve.
10. Develop a multiyear improvement plan.
11. Send in the PQR Completion Form.

IMPLEMENTATION AND FOLLOW-UP**

*Consultation occurs at various times throughout the process.

**Begins in May and continues through subsequent years.

SAMPLE II
TIME LINE FOR PQR PROCESS
1991-92

SEPTEMBER 19–20 Two-Day Training	PQR training meetings
SEPTEMBER 21	Leadership team debriefing
OCTOBER 7 Faculty Meeting	Introduction to Program Quality Review pilot
NOVEMBER 18 One-Day Training	Authentic assessment training at county office
DECEMBER 10	Staff training on authentic assessment
JANUARY 13 Minimum Day	Authentic assessment workshop Progress report on Program Quality Review Introduction to language arts criterion Report from Reading Conference
JANUARY 27 Faculty Meeting	Implementation decisions for portfolios and authentic assessment *English–Language Arts Framework* review Site plan review
FEBRUARY 3 Faculty Meeting	Thorough review of language arts criterion Discussion and description of thinking, meaning-centered curriculum
WEEK OF FEBRUARY 10	Visitations to other schools to observe thinking, meaning-centered curriculum
FEBRUARY 24 Minimum Day	Discussion of video *Discovering the Future: The Business of Paradigms* Introduction to instructional support criteria Completion of language arts program descriptions Chapter 1 Restructuring Thinking curriculum assignments

MARCH 6 Leadership Team Release Day	Develop questions in preparation for March 23 plan preparation - Student work comparison - Design of structure for self-review document - Finalization of site plans - Finalization of language arts program descriptions
MARCH 13 Minimum Day	Plan for comparison of student work to criterion - Sharing and development of "essential questions" - Plan for observation days and interviews Conference with outside consultants
MARCH 23 Release Day	Compare student work to criterion and write student work summary Describe what is/what needs to be Begin writing improvement plan Conference with outside consultants
MAY 1 Release Day	Finalize improvement plan and assign responsibilities/calendar activities. Meet with outside consultant team.

SAMPLE III
TIME LINE FOR PQR PROCESS FOR YEAR-ROUND SCHOOL
1991-92

6-4-91	• PQR briefing for principals and potential consultants
6-10-91	• Submittal of area for in-depth study to district and consortia director
6-11-91	• SSC meeting: orientation for SSC to PQR pilot program
7-5-91	• Selection of leadership team
7-19-91	• SSC meeting: PQR training/PQR pilot discussion
7-22-91	• Staff meeting: update of pilot program
8-5-91	• Leadership team meeting: discussion in preparation for fall PQR training
8-19-91	• Staff meeting: update of pilot program
9-5-91	• Leadership team meeting: PQR time line distributed and discussed
9-10/11-91	• PQR pilot training
9-17-91	• SSC meeting: PQR training report/PQR pilot update
9-23-91	• Begin collection of student work samples • Staff meeting: in-service session on "Student Work" emphasis in the new PQR pilot
9-26-91	• Component group meetings: distribute and discuss PQR time line/ PQR pilot update
9-30-91	• Nonstudent day: whole school focus on authentic assessment in science
10-3-91	• Leadership team meeting: write self-review survey and discuss quality criterion for science

10-7-91	• Staff meeting: in-service session on new science quality criterion
10-15-91	• SSC meeting: self-review update and information
10-25-91	• Observations of Track D classrooms
11-7-91	• Leadership team meeting: establish criteria for classroom observations
11-13/14-91	• Observations of Track A, B, and C classrooms
11-19-91	• SSC meeting: report of classroom observations; reminder re: 12-9-91 self-review data compilation meeting
11-22-91	• Debriefing meeting for leadership team
12-2-91	• Deadline for class portfolios of science activities
12-9-91	• Compilation of observation and portfolio data by leadership team and SSC • Completion of "Student Work" section of self-review
12-10-91	• Initial meeting of consultants, principal, and leadership team
12-16-91	• Staff meeting: update of self-review process; decision to continue portfolio collection until January 31, 1992
1-6-92	• Staff meeting: reminder of portfolio collection
1-7-92	• Staff memo: ideas for portfolio collection
1-13-92	• Leadership team meeting: discussion of leadership team role in PQR pilot program
1-31-92	• Portfolios due
2-3-92	• Staff meeting: evaluation of portfolios
2-4/5-92	• Compile self-review materials and write Student Work Summary
2-11-92	• Distribute self-review materials to SSC, PQR consultants, and staff
2-24-92	• Staff meeting: discussion of self-review results

2-25-92	• Consultants meet with leadership team and administration to discuss self-review results and develop improvement plan • SSC meeting: meet with consultants
3-9-92	• Staff meeting: meet in component groups to discuss strategies for improvement plan
3-16/17-92	• SSC, leadership team, and consultants write improvement plan
3-31-92	• Rough draft of improvement plan sent to SSC and staff
4-21-92	• SSC meeting: input to and ratification of improvement plan as component of 1992–93 school plan
5-92	• Meeting at district office to discuss improvement plan

SAMPLE IV
STUDENT WORK SUMMARY IN SCIENCE

School: ______________

District: ______________

This Student Work Summary for the curricular area of science was developed through reviews of student work, classroom observations, and parent and staff discussions. Interpretation of the nature, quality, and frequency of science learning was a key factor in arriving at our conclusions. The *Science Framework*, the PQR science criterion, and *It's Elementary* were used as resources for analyzing the student work.

1. **Students construct their own understanding of science through inquiry and investigation.**

   - Students frequently record prior knowledge, questions, and predictions in notebooks and on class charts.

   - Students are engaged in experiments and hands-on activities between 20 and 90 percent of their class time, depending on the class and the grade level.

   - Most students at all grade levels seem to enjoy science and extend their learning outside the classroom by often sharing experiences, books, and objects from home that exemplify science concepts learned in class.

2. **Students use some scientific thinking processes (observing, communicating, comparing, ordering, and categorizing) more than others (relating, inferring, and applying).**

   - All students use the process of observation. Most students use their five senses to construct a view of the world and how it works. Although observations include objective and verifiable information, there is evidence that opinions and guesses are also included.

   - Most students use appropriate vocabulary to communicate essential ideas and scientific data through oral presentations. Most students present scientific data through a variety of modalities such as drawings, models, diagrams, graphs, charts, histograms, and written summaries.

   - Most students can compare similarities and differences of objects and natural phenomena, but there is little evidence that students learn about the unknown by comparison with the known.

- Most students at all grade levels are able to seriate objects or phenomena and sequence events in a linear or cyclical manner.

- All students can sort or group objects or phenomena on the basis of a single shared characteristic. Most students can categorize items or phenomena on the basis of more than a single characteristic.

- Formal understanding of interactions, dependencies, and cause-and-effect relationships is limited.

- Students rarely make inferences or apply their knowledge to new situations.

3. **Student work does not represent a well-balanced treatment of life, earth, and physical science, and the proportions vary widely within and across grade levels.**

    - Students spend most of their time in the area of life science (about 40 percent on the average).

    - Students work some of their time in the area of earth science (about 35 percent on the average).

    - Students spend the least amount of time working in the area of physical science (about 25 percent on the average).

4. **Most student work does not reflect learning connected to the "big ideas" within the disciplines of science nor themes across the disciplines of science.**

    - Students are learning science as separate and unrelated topics, such as light, rather than related to a big idea, such as how energy can be converted from one form to another.

5. **Students demonstrate an understanding of science concepts through a variety of assessment strategies, but these assessment strategies vary from class to class and across grade levels.**

    - Open-ended discussions, teacher observations, and products are used frequently in the primary grades.

    - Upper-grade students demonstrate their skills mainly through traditional tests.

    - Performance-based tests and portfolios are used inconsistently across grade levels.

SAMPLE V
STUDENT WORK SUMMARY
LANGUAGE ARTS

School: ____________________________

District: ____________________________

I. What evidence do we have that the language arts program is literature-based and meaning-centered and exposes all students to significant literary works?

Observations of classroom discussions, small-group instruction, and response journals indicate that students draw upon experience to make predictions, ask questions, and initiate discussions about the text. In some classrooms students read or listen to self-selected works, student-authored texts, and works which are representative of a variety of genres. Some works are chosen by teachers to represent a variety of cultural perspectives. Core selections are chosen to include a range of cultural perspectives. In some primary and intermediate grades, students confront personal, moral, and ethical issues and values presented in literature via daily journal writing. Students do not help select core or extended titles, but do choose recreational titles.

II. What evidence do we have that the instructional program emphasizes the integration of listening, speaking, reading, and writing in most classrooms?

Observations of student work indicate that students share written and graphic responses to the literature they have read or heard. Students were observed composing stories on computers, reading core literature, writing stories at center areas, and completing journals from teacher prompts as well as student-chosen topics. Students in primary classrooms read stories to classmates and copied stories from the board as a class.

Students were observed listening and responding to a variety of works. Journals and group discussions provide students with opportunities to discuss reading strategies and share their responses to literature. Students observe and imitate teacher behaviors that result in good discussion-probing questions, building on the contributions of others, disagreeing in a positive manner, valuing the contributions of others, etc., so that they learn to carry on discussions independently in literature study groups. Teachers were observed reading to children, and children read in groups led by teachers. Students were also observed reading together.

Individual and whole-class writing was displayed and published. Evidence of language arts portfolios was available in a few classrooms. There was evidence that students have access to their portfolios; they participate in the selection of items for inclusion and reflect on their own learning. Students used computers for spelling, writing, and publishing and for playing reading games. They also wrote original stories in response to stories read in class. Bulletin boards and walls displayed student work. Class books were available for browsing, and book projects were displayed, along with books made by individual students and class-made books. In some classrooms, students spent extended time writing during Writers Workshop.

III. What evidence do we have that the program includes reading to construct and clarify meaning and directs attention to the various stages of the reading process and that reading is perceived as part of the process of acquiring and developing language?

Student interviews indicated that students like to read. All students said they sometimes have the opportunity to choose what they want to read. At the primary level, this opportunity occurred at library time. All students indicated that they read after school. When asked if they shared what they had read with classmates, primary students said they shared a favorite page and did oral book projects and book reports. Intermediate students said they read their stories during Writers Workshop. Students at the primary level did reading activities at centers or at their seats, with friends or with the teacher. Primary students said they sometimes get a chance to talk with a group of older students about what they have read. Sometimes they read their stories to the whole class. They sometimes share their favorite parts of books. Intermediate students work on book projects by themselves and with others.

Students are encouraged to respond to and interact with text as they read by questioning, predicting, and making margin notes. Students are conscious of their own repertoire of reading strategies.

IV. What evidence do we have that the program includes writing to construct and clarify meaning and directs attention to the various stages of the writing process?

Students at all grade levels participate in editing activities, including read-around groups and peer and self-editing. Minilessons based on individual writing needs provide the basis for successful editing activities.

Kindergarten students who are prewriters create stories through drawings or other types of wordless text. In the primary and intermediate grades, students invent spellings to facilitate their writing. Most written final products include correct spelling and conventions of language. At the kindergarten level, all students are at the beginning writer stage in communicating ideas in science, literature, and social studies. First graders write across the curriculum, talk about their writing, and use writing to synthesize information and gain insights. First graders write daily and revise their writing.

In some second grade classrooms, students use the writing process while working on self-selected topics and teacher-assigned topics. They produce a few drafts in which the meaning is made clear to the reader and in which the conventions of language—grammar, punctuation, spelling, and handwriting—are used appropriately. In some second grade classrooms, students write frequently through a variety of techniques in all subject areas in order to synthesize information and gain insights.

Samples of third grade student work indicate that students use the writing process while writing on self-selected topics and teacher-assigned topics. Students produce final drafts in which the meaning is made clear to the reader and in which the, conventions of language—grammar, punctuation, spelling, and handwriting—are used appropriately. Some students revise their writing without teacher supervision.

In fourth and fifth grade classrooms, students talk to each other about their work and use the writing process while working on self-selected topics, teacher-assigned topics, and subject areas in order to synthesize information and gain insights. Students produce final drafts in which the meaning is made clear to the reader and in which the conventions of language—grammar, punctuation, spelling, and handwriting—are used appropriately. Students in some classrooms at these levels write daily and in response to writing prompts.

V. What evidence do we have that the program includes attention to oral language development and proficiency?

Classroom observations indicated that students make predictions, ask questions, and initiate discussions about their interpretations of the text. Students regularly engage in formal and informal oral discussions. Each student is given an opportunity to participate. Students participate in dramatic activities such as readers' theatre and choral reading. In some intermediate classrooms, students examine the qualities of effective speech in situations that involve audiences and that are meaningful to the students.

VI. What evidence do we have that the program includes an assessment component that encompasses the full range of English–language arts goals and incorporates performance-based approaches in assessment?

Authentic assessment practices allow for a wide range of opportunities for students to demonstrate learning—portfolios, student projects, and student performances.

SAMPLE VI

DISTRICT NAME:

__________ ELEMENTARY SCHOOL'S IMPROVEMENT PLAN FOR VISUAL AND PERFORMING ARTS

FINDINGS	WHERE WE WANT TO BE	ACTIVITIES FOR HOW WE GET THERE		
		1993-94	1994-95 *Continue all of 1993-94 plus*	FUTURE YEARS
WHAT WE TEACH • Many arts topics are repeated throughout the grades. • Art and performances are sometimes taught in connection with holidays. • Visual and performing arts experiences do not always include instruction for perceptual, concept development and individual creative expression. • There are few opportunities to develop listening skills for the appreciation of various styles, concepts, and cultural differences of music.	• A balanced arts program •. To teach major arts concepts in depth, including non-performance skills. • To incorporate themes from the curricula into the teaching of the arts. • To expand the art and music program so that it is varied and aligned with the curriculum. • To include instruction or opportunity to see art in its historical and cultural perspectives.	• Provide teacher visual and performing arts inservice throughout the school year. • Provide updated materials for visual and performing arts. • Expand the Art in Action program. • Incorporate a computer program that emphasizes visual and performing arts. • Use social studies and history instruction as introductions to varying forms of art and music. • Purchase materials and equipment to enhance art experiences for students.	• Encourage the integration of art in the curriculum in all mediums. • Develop programs in visual and performing arts using community resources i.e., ______ Opera Company, Felicita Foundation, Young Audiences, Center for the Arts, and other community-based activities. • Use the creative talents of teachers and parents in all mediums by providing training and release time for workshops/inservices.	→ → →

__________ ELEMENTARY SCHOOL'S IMPROVEMENT PLAN FOR VISUAL AND PERFORMANING ARTS

FINDINGS	WHERE WE WANT TO BE	ACTIVITIES FOR HOW WE GET THERE		
		1993-94	1994-95 *Continue all of 1993-94 plus*	FUTURE YEARS
WHAT PERFORMING ARTS INSTRUCTION IS LIKE • Students learn and apply basic arts elements to their own work. • Music, drama, and dance are learned in the context of specific performances. • Appreciation of the varying forms, styles, and historical significance of music is sometimes taught and experienced. • Art in Action program uses volunteers as docents giving students an overview of various artists and styles with many opportunities to apply techniques and media to their own work. • Students gain skills to express their own ideas, values and feelings as they produce and work in various media.	• Students gain experience in all four components of arts education: dance, theater/drama, music (appreciation and performance) and the visual arts. • Student- centered learning to reflect cultural differences. • Projects that reflect the interests of the community, family and the indivdual. • Increase group collaborative projects.	• Continue the Art in Action program, expanding the use of volunteers. •. Provide funds for materials and equipment for students to develop perceptual skills using art/drama/music supplies and computer software. • Incorporate dance and movement in the physical education program. • Involve staff talents and experiences in the teaching of the arts. • Provide training and inservice release time for staff to allow for the development of a music appreciation and drama/ theater program. • Continue the multi-cultural fair activities. • Explore possible participation in community events in performing arts.	• Encourage the integration of art in the curriculum in all mediums. • Use teachers and parent volunteers to teach vocal music, instrumental music, musical theater and dance by providing funds for classroom release time.. • Provide opportunities for students to analyze, interpret and judge their artwork and others.	→ → →

__________ELEMENTARY SCHOOL'S IMPROVEMENT PLAN FOR VISUAL AND PERFORMING ARTS

FINDINGS	WHERE WE WANT TO BE	ACTIVITIES FOR HOW WE GET THERE		
		1993-94	1994-95 *Continue all of 1993-94 plus*	FUTURE YEARS
HOW STUDENTS ACQUIRE PERFORMING ARTS KNOWLEDGE • Students do not always see connections between lessons taught in art and the social studies, history, and reading programs. • Experiences in art and music include some opportunities for creative expression and individual diversity. • Few connections between art, music and drama, and real life situations are taught.	• Visual and performing arts instruction taught in conceptual units that relate to all areas of instruction. • Students to see connections and relate arts to other subject areas. • Teachers to use students' prior experiences, cultural backgrounds, and diversity to acquire new visual and performing arts knowledge and concepts. • Teachers share their own prior experiences, cultural backgrounds, and diversity to acquire new visual and performing arts knowledge and concepts.	• Develop an assembly committee to provide oppportunities for students in the areas of the performing arts. • Provide funds to purchase updated materials and equipment for all mediums including arts and crafts, music, dance, and drama. • Develop inservices utilizing community and school resource people with varying backgrounds. • Offer funds to allow students to attend field trips and assembly opportunities in all art mediums. • Develop a Music In Action program. • Use talents of volunteers to assist in productions and art displays. → • Utilize the resources of the Felicita Foundation and the __________ Performing Arts Center for students to become both audience and participants. →	• Provide students with scholarships to attend community workshops. • Continue to enhance programs using Reader's Theater, Art in Action, Art Rig, Annual Talent Show, Annual Student Art Show, Multicultural Fair, and community resources. • Utilize the facilities available at the new Center for the Performing Arts of__________.	→ → → → →

______ ELEMENTARY SCHOOL'S IMPROVEMENT PLAN FOR VISUAL AND PERFORMING ARTS

FINDINGS	WHERE WE WANT TO BE	ACTIVITIES FOR HOW WE GET THERE		
		1993-94	1994-95 *Continue all of 1993-94 plus*	FUTURE YEARS
HOW WE ASSESS PERFORMING ARTS • Use of multimedia in art. • Collection of student work is kept in individual portfolios throughout the year. • Student work is displayed in an annual art show. • Music and dance as well as art reflect cultural diversity as presented during the multicultural fair. • Student work at this time reflects individual effort and use of techniques, and materials acquired through the Art in Action docent program.	• A variety of assessment methods (i.e. videos, recordings, portfolios) will expand displays and performances to include others in the community. • Develop a plan to involve more parents as participants in arts events.	• Contact schools who have outstanding arts programs. • Allow for release time for teachers to develop and produce musical and theater productions. • Develop a survey or checklist for assessment of the impact of the visual and performing arts program. • Establish an on-going gallery of students work. • Provide funds to purchase multi-media equipment to tape and record student progress in all mediums.	• Maintain yearly programs for the display of student artwork including student art shows, Multicultural Fair, Talent Show, individual classroom plays, dances, and music. • Develop a visual and performing arts survey for teacher/volunteer input regarding the effectiveness of the visual and performaing arts program. • Encourage student achievement in instruction using creative expression, aesthetic perception, arts heritage and aesthetic valuing.	→ → →

SAMPLE VII
IMPROVEMENT PLAN FOR MATHEMATICS

School: ____________________________

District: ____________________________

I. Our goals for mathematics lessons

A. Teacher will facilitate implementation of multiday lessons involving more than one big mathematical idea.

1. Staff-development activities

a. Educate staff about the philosophy and strands of the *Mathematics Framework*. (92–93)

b. Identify a staff member to become a participant in the regional California Mathematics Project. (92–93)

c. Identify staff members to become demonstration teachers for multiday mathematics units. (92–93)

d. Provide staff development in the implementation of multiday instructional units. (93–95)

e. Provide staff development in cooperative learning. (93–95)

f. Provide release days to:

- Develop or research new units.
- View demonstration programs.
- Determine ways to integrate math with other subject areas. (92–95)

2. Desired materials

a. Purchase and/or identify replacement units and multiday units. (92–93)

b. Purchase, pilot, and evaluate selected multiday units for dissemination to other staff. (92–95)

3. Other resources employed

    a. Explore community sources of funding for demonstration class materials. (92–95)

    b. Explore available grants to fund demonstration class materials. (92–95)

B. Math lessons will be flexible and not restricted to specific regular daily blocks of time.

1. Staff-development activities

    a. Encourage teachers to vary daily time allotted for regular lessons, units, or group work. (92–95)

    b. Encourage teachers to provide minilessons as the need arises within long-term student investigations. (92–95)

2. Student outcomes

    a. Students having difficulty will have opportunities for additional teacher assistance at times other than regular classroom instructional time. (92–95)

    b. Students with special needs (e.g., those performing at levels below their peers) will receive extra help from Chapter 1 and special education teachers in the regular classroom in order to enhance their learning and performance.

    c. Students with extended math projects outside of class may receive parent and community assistance.

C. Math curriculum and course of study will be brought into alignment with the framework.

1. Staff-development activities

    a. Educate staff about the philosophy and strands of the *Mathematics Framework*. (92–93)

    b. Provide release days for alignment with the *Mathematics Framework*. (93–95)

II. Our goals for the availability and use of instructional tools

A. Students will have free access to manipulatives, calculators, computers, and video technology to solve problems.

1. Staff-development activities

a. Provide staff development in use of manipulatives. (92–95)

2. Desired materials

a. Purchase calculators and appropriate grade-level manipulatives. (92–95)

b. Purchase graph-making software. (93–95)

c. Purchase videotapes. (92–93)

d. Purchase appropriate cables to connect computer to VCR. (92–93)

e. Purchase video camera and computer equipment. (94–95)

3. Student outcomes

a. Students will be able to use available manipulatives, calculators, and technology at their own discretion. (92–93)

B. Students will be taught to use computer and/or video technology for developing data bases, graphs, and spreadsheets and for communicating findings of reports and projects.

1. Staff-development activities

a. Train staff and students in the use of data bases, spreadsheets, word processing, and logo. (92–95)

b. Establish demonstration programs of integration of computer and/or video technology. (92–95)

c. Train staff and students in the use of computer and vide technology. (92–95)

2. Other resources employed
    a. Explore community sources of funding for demonstration class materials. (92–95)
    b. Explore available grants to fund demonstration class materials. (92–95)

III. Our goals for student interaction and grouping

A. Students will work in heterogeneous groups; at times students have the option of working independently.

1. Staff-development activities
    a. Provide staff development in cooperative learning. (93–95)
    b. Encourage teachers to provide an environment that fosters investigating, experimenting, and taking risks in finding solutions to problems. (92–93)
2. Student outcomes
    a. Increasingly, students will work in cooperative groups. (93–95)
    b. Students will have opportunities to work in special interest groups, clubs, or activities. (92–95)

B. Students will interact with each other to facilitate math instruction.

1. Other resources employed
    a. Expand cross-age tutoring system to include topics in math. (92-93)
    b. Expand Chapter 1 "buddy" system, as currently employed in the reading lab, to include mathematics. (92–93)

IV. Our goals for assessment by teachers

A. Teachers will allow students to revise assignments to improve final grades.

B. Teachers will adopt a more flexible grading system for group work and grading practices which include revision in students' grades during multiday lessons.

- C. Teachers will analyze student work as a form of assessment.
  - 1. Staff-development activities
    - a. Develop and implement guidelines for math portfolios as established by leadership team members. (92–93)
    - b. Develop standards for acceptable quality of student work. (92–93)
    - c. Introduce and explain the concept of alternative and varied assessment practices to teachers. (92–93)

V. Our goals for assessment by students

- A. Students may revise work to demonstrate understanding of math concepts.
- B. Students will participate in peer/self-assessment of math investigations and presentations.
- C. Students will be expected to explain their thinking in presentations to others.
  - 1. Student outcomes
    - a. Students will use math logs as a means of communicating understanding of math concepts and investigations. (92–95)
    - b. Increasingly, students will use the language of mathematics in communications. (92–95)
    - c. Students will use self-/peer assessment, which may include math response groups and portfolios. (92–95)

VI. Our goal for evaluation of the improvement process

- A. School leadership team will evaluate our school's progress toward desired practices and revise our improvement strategies as necessary.
  - 1. Improvement Process
    - a. Establish time line for implementation, which will be displayed in staff room. (92–93)
    - b. Monitor implementation and progress as indicated on time line and revise accordingly. (92–95, quarterly)

SAMPLE VIII
PROGRAM QUALITY REVIEW
VISITATION REPORT

School:	**District:**	**PQR Consortium:**
Consultants:	**Curricular Area Selected:**	**Date of Visitation:**

Please address the following in each report:

- **What occurred during your visit to the school?**
- **What are the next steps for the leadership team and consultant team in the PQR process?**

Also include the following, when appropriate:

- **What essential questions were developed, and what process was used to develop them?**
- **What is the plan for collecting and analyzing student work?**
- **What improvement strategies are being developed for inclusion in the improvement plan?**

SAMPLE IX
PROGRAM QUALITY REVIEW VISITATION REPORT

School: ____________________________

District: ____________________________

Curricular Area: Science

Date of Visitation: January 15, 1992

Consultants:

Introduction

We visited ______________________ elementary school in ________________, California, on Wednesday, January 15, 1992, and observed students working in the school's science laboratory and in regular classrooms. We had an opportunity to meet with the school's leadership team and review its self-study. The principal met with us in the morning to discuss the school's curriculum and demographics.

Observations

We had an opportunity to observe kindergarten, first grade, and second grade students engaged in several hands-on science lessons, which were taught and developed by the school's science resource teacher. We made the following observations:

- Students appeared to be interested in the science activities they were doing.
- Students were engaged in scientific thinking: They were asked to predict which items would float or sink in a tub of water; they were asked to compare container sizes and predict which might hold more water.
- The science laboratory is well organized and equipped, providing a stimulating environment for learning. The room has hot and cold running water, large tables for hands-on activities, and storage space for science materials. Animals such as rabbits, turtles, frogs, and worms are available for students to observe. Learning stations arouse students' curiosity.
- The science laboratory is kept open at recess, allowing students further access to learning stations and animals.
- Students are encouraged to develop their own hypotheses. First grade students engaged in a hands-on experiment were debating whether water or air pressure causes water to stay in an inverted cup.

- Second-language and special needs children are fully integrated and participate in hands-on activities and discussions.

- Students were working in cooperative groups. They used science equipment safely and appropriately. Students were given a signal for clean-up.

- Parental and home involvement is encouraged through the use of letters and *Just for Fun* homework. A book of bathtub science activities was sent home with children following their own exploration of water in the science laboratory.

- Each class currently spends 30 minutes per week in the science laboratory for one semester.

We also visited 12 classrooms at the kindergarten through second grade level. We observed a learning environment which promotes student achievement and classrooms conducive to learning. Student discipline was excellent. In addition, we noted the following:

- Student writing on science in the first and second grades was displayed on bulletin boards and was part of students' journals.

- Many art activities were related to scientific themes.

- At all grade levels, literature was integrated with science, as well as other subjects, through activities related to stories in the school's reading series. For example, two teachers were integrating a unit on the five senses with the story *Goldilocks and the Three Bears*.

- Students were engaged in mathematics activities, such as making weather graphs and measuring whales, which relate to the science units being studied in the classroom. *Math Their Way* activities were used to teach classification and comparison skills. Many students had completed *AIMS* activities, which integrate mathematics and science concepts.

- Students were learning to read and understand science vocabulary words in the regular classroom. This activity appeared to be very beneficial for students whose primary language is not English.

- Photographs and videotapes were produced of students involved in science activities and learning.

- A variety of teaching techniques were observed in classrooms, including cooperative groups, direct instruction, students' use of manipulatives, journal writing, and student gardening.

Recommendations

In the afternoon we met with the nine staff members on the leadership team and the principal to share our observations of student learning and discuss the needs of the science program. After reading the school's self-study and proposed improvement plan, we made the following recommendations:

1. Since many classrooms lack adequate facilities and materials for hands-on science exploration, the school might consider keeping the science laboratory open all year long. After the science resource teacher leaves, the room could be used for hands-on science activities by classroom teachers. In this way, teachers could share science equipment and materials, and the laboratory could continue to house animals and learning centers of interest to students at all grade levels.

   If the laboratory is not available during the second semester, perhaps another room equipped with sinks and storage could be used as a science/art center where teachers bring their students to do hands-on activities.

2. We encourage the school to continue its efforts to find adequate funding to purchase additional science materials. If the P.G. & E. Mini Grant Proposal for Science at Home materials is not funded, the school should consider asking the PTA or school site council for funding. This is an excellent proposal which would increase parent participation and awareness of the science curriculum.

   The school should investigate other sources of funding for the science materials needed in the classroom. The staff might consider developing a list of needed science materials that parents or community members could save, buy, or donate to the school. For example, plastic bottles, tubs, and seeds are all needed for hands-on science exploration.

3. We encourage teachers to observe activities in the science laboratory when the science resource teacher is teaching. We realize that doing this may infringe on teachers' badly needed class-preparation time, but teachers would be able to:

   - Observe good science teaching and management of hands-on activities.
   - Develop an awareness of the science concepts their students are being exposed to.

   The principal also expressed a willingness to cover classes so that teachers can observe instruction and learning in the science laboratory.

4. We concur with the school's plan to establish better coordination and articulation of the science program at each grade level. The staff currently holds grade level meetings at

least once a month, and several grades have already developed science units integrated around the literature series. Articulation between grade levels as well as within grade levels is recommended. Then, a thematic science unit such as marine life could be repeated from grade to grade, but a deeper level of conceptual understanding of concepts would be encouraged through different student activities.

The school may want to make time available for the science resource teacher to meet with teachers and help them develop and evaluate their integrated science units.

5. We recommend that the school add to its science plan a component for documenting student learning. We realize it is difficult to document student learning at the primary grade levels; however, the school is already using techniques such as photographs and videotapes to record science activities in the laboratory and classroom. Teachers might consider a portfolio assessment. A student "science scrapbook" or folder could be kept for each student. The scrapbook could contain:

   - Photographs of the student engaged in science activities such as experiments and field trips
   - Writings or drawings about what was observed or learned in science
   - Audiotapes of oral reports or of the student talking about a science activity he or she was engaged in

6. We encourage the ongoing participation of parents in the science program. The excellent homework units created by the science resource teacher encourage students to talk about science concepts at home. The school might consider applying for funding to conduct a *Family Science* course.

We commend the school's self-review process thus far. The leadership team now faces the task of developing a workable improvement plan for science and writing a student work summary. We have enjoyed our visit as consultants, and we are willing to provide further assistance if needed.

SAMPLE X
VISITATION REPORT
MATHEMATICS

We visited _______________ School in _____________ District during math time and looked at samples of student work. Based on the visit and student work samples, and the *Mathematics Framework*, we made recommendations for areas of improvement.

During the visit, we were able to see parts of math classes in nine of the 13 classrooms where math is taught. We were also able to see, on bulletin boards, some work from previous math lessons. We received samples of student work in seven of the nine classrooms. We realized that our time was limited, but our findings included the following:

- Use of manipulatives (base 10 blocks, pattern blocks, money, graph paper, etc.) in four classrooms
- Number strand activities in ten classrooms
- Measurement strand activities in eight classrooms
- Geometry strand activities in three classrooms
- Graphing activities in three classrooms
- Statistics as part of a graphing activity in one classroom
- Patterning as part of math lessons in two classrooms
- Use of technology (calculators/computers) for math in one classroom
- Students involved in writing or speaking to explain their mathematical thinking in two classrooms

For the most part, students needing additional assistance with math (Chapter 1 or Special Education students) received help while mainstreamed within the regular classroom.

Recommendations based on the *Mathematics Framework:*

- Allow students more time to think and communicate about mathematical ideas using mathematical tools and techniques. Provide teachers training opportunities in this area.
- Allow students opportunities to show that they can use mathematics to do something meaningful.

- Allow students to develop a range of computational procedures, with a greater emphasis on number sense than on algorithms.

- Use the benchmarks written by your staff this year to develop various forms of assessment (observation, performance-based, portfolios, math journals, etc.) to evaluate student progress in achieving those standards.

- Look at the benchmarks written by your staff this year and look to see whether students at each grade level are building on the mathematical power gained the year before.

- By grade levels, develop investigations that are appropriate for students of various ages. These investigations should be used in conjunction with a "balanced diet" of other types of student work: short exercises, interesting problems, collaborative tasks, and larger, long-lasting projects.

- Work on developing mathematical units (or attend replacement unit training) that help to balance the various mathematical strands and unifying ideas discussed in the *Framework* (see pages 95–96 of the *Framework*.)

- As a staff, examine computer software in the area of mathematics to find which programs are "learner-centered software," and, thus, would be in line with the *Framework* (see pages 59–60).

SAMPLE XI
VISITATION REPORT
LANGUAGE ARTS

Date of visit: November 17, 1992

Consultants: ______________________

Curricular area: Language Arts

We visited ______ School in ___________ District all day on November 17, 1992, to observe students working in the school's selected area of focus, language arts, and to share our observations with the _____ leadership team as a starting point for the self-review process. In collaboration with members of the leadership team, we spent the morning visiting the majority of classrooms; we spent the afternoon visiting the remainder of the classrooms and meeting with the leadership team in a debriefing session to share our data and determine the next step in the PQR process at the school.

Before beginning our observations, we tentatively revised two of the school's essential questions to remove certain ambiguities. The leadership team agreed with these revisions during the afternoon debriefing session. The revised essential questions read as follows:

1. What evidence do we have that students are exposed to literature that allows them to confront moral and ethical issues?
2. What evidence do we have that language arts is integrated across all areas of the curriculum?
3. What evidence do we have that the language arts program is student-centered and balances listening, speaking, reading, and writing?
4. What evidence do we have that students are exposed to multicultural literature?

We observed bilingual Spanish and regular classrooms for grades K–5 as well as a special day class for grades 1–3. Throughout the day we were accompanied by members of the leadership team, who received release time to help gather data for discussion later that afternoon. The staff is to be commended for their openness and willingness to share information. We felt welcomed in their classrooms, and their students answered questions enthusiastically. Many teachers were eager to discuss the background of classroom projects, work centers, individual writing assignments, classroom routines, and the progress of individual students. Their attitude speaks highly of their commitment to developing the most successful school possible for their students. In our observations, we focused on gathering evidence in regard to the four essential questions selected by the ________ staff.

Observations in regard to the essential questions:

1. What evidence do we have that students are exposed to literature that allows them to confront moral and ethical issues?

   While confronting moral and ethical issues through literature is one of the goals for a successful language arts program, we believe that such confrontation can only occur through the conscious efforts of a committed staff. The staff has chosen to make that goal a reality. However, at this time, there was little evidence that students were exposed to literature that allowed them to confront moral and ethical issues. Although it was evident that students had the opportunity to respond to questions related to the literature they were studying, many of these questions were at the recall/comprehension level, and only a few raised moral and ethical issues.

   We suggested that analysis of this area could be done more accurately through a long-term study by the school staff/leadership team. A starting point might be to create opportunities for students to discuss moral and ethical issues in literature lessons. The next step would be to share issues raised and literature used in classrooms through a "billboard" of chart paper posted in the faculty lounge. With the billboard method, there would be a record that might later be developed into a more systematic approach. Time set aside for staff to focus on and discuss this particular area is also recommended.

2. What evidence do we have that language arts is integrated across all areas of the curriculum?

   There was evidence that students had the opportunity to listen, speak, read, and write across the curriculum, particularly in the areas of social science and science, through activities such as oral reports/speeches, research reports, designing of campaign posters, completion of worksheets to follow up science experiments, and writing of short narratives about holidays and field trips. There was less evidence that students used language arts to construct/synthesize meaning in mathematics or other areas.

   We suggested that the leadership team collect student work samples in all curriculum areas for analysis during their self-study process, with emphasis on collecting samples which demonstrate the integration of different subject areas. It might be helpful if the staff developed schoolwide criteria for portfolio assessment to ensure consistency in what is collected and to facilitate collection of data.

3. What evidence do we have that the language arts program is student-centered and balances listening, speaking, reading, and writing?

There was evidence in some classrooms that students were actively engaged in constructing knowledge about language arts through activities such as readers' theatre, oral reports, election speeches, literature logs, sustained silent reading, story mapping, audiotaping of oral reading, student-authored books, discussion, semantic mapping, and journal writing, as well as opportunities to work cooperatively in groups. However, in most classrooms, students were observed responding to literature through pencil-paper tasks, such as reading worksheets. In the classrooms we observed, teachers seemed to be the directors, not the facilitators, of the instructional process. Many writing samples (such as journal entries or short narratives) were generated from a teacher-selected topic and/or format. From student interviews, it became apparent that the main audience for listening, speaking, reading, and writing activities was also the teacher and that students did not have frequent opportunities to share their learning with others, especially their peers. Some students we interviewed stated that the teacher would write the story and they would copy it from the board. Other students stated that the teacher was responsible for correcting student errors. From these interviews, it became apparent that students generally had limited opportunities to participate in the writing process.

We suggested that the leadership team and the staff clearly define, in concrete terms, what is meant by *student-centered, active learning,* and *construction of meaning,* and then use these criteria to gather additional data during their self-study process and compare examples of student work and students working with examples and descriptions cited in the PQR language arts criterion, the *English–Language Arts Framework,* and the *English–Language Arts Model Curriculum Guide, K–8* .

4. What evidence do we have that students are exposed to multicultural literature?

There was evidence of multicultural literature in most classroom libraries. Titles included works in both English and Spanish as well as works of Asian and African-American literature.

We suggested that evidence in this area could be more effectively collected by the leadership team and the staff through an inventory of multicultural literature available in the classrooms and in the school library. The results of this inventory may influence future allocations of funds to address the school's self-assessed needs in this area. We commended the staff for their desire to increase students' exposure to multicultural literature and to acquire more such resources. The leadership team may choose to consult the Department of Education's *Recommended Readings in Literature, K–8* for specific titles in the school's areas of interest.

Debriefing:

During the debriefing session, we shared our observations and suggestions with the school's leadership team. They were receptive to our input and eager to address areas of concern in collaboration with their staff. It was mutually agreed upon that the leadership team should now pursue the self-study process in depth and prepare the Student Work Summary before our next meeting on February 10, 1993. At that time, we will review the Student Work Summary document and then collaborate with the leadership team to develop or refine the school's improvement plan at our final meeting on March 3, 1993.

PART IV

THE CALIFORNIA ALLIANCE FOR ELEMENTARY EDUCATION

THE CALIFORNIA ALLIANCE FOR ELEMENTARY EDUCATION

What is the Alliance?

The California Alliance for Elementary Education is a statewide network of elementary schools and over 70 professional organizations that have joined together to improve elementary education in California, following the recommendations described in *It's Elementary!*, the report of the Elementary Grades Task Force.

Who Can Join the Alliance?

Any elementary school, public or private, in California where the teachers and principal are committed to the vision of elementary education described in *It's Elementary!* can join the alliance.

Why Should Schools Join the Alliance?

Schools join the alliance for the same reason individuals join professional organizations—they share the organization's goals and realize the strength that is created when large numbers of people work together for a common purpose.

What Are the Types of Alliance Membership?

There are several ways for schools, agencies, or individuals to join the California Alliance for Elementary Education:

- **Full membership** is designed for those schools that want to make *It's Elementary!* the primary organizer for their improvement efforts and are able to make significant contributions to the work of the alliance.

- **Associate membership** is a one-year trial membership for schools that wish to be part of the reform effort, but are not ready, for whatever reason, to commit to full membership at this time.

- **Institutional membership** is for district offices or county offices of education, enabling them to be knowledgeable of the reform effort, as well as to contribute to the work of the alliance.

- **Colleague membership** is for individuals within **full membership** schools (site council members, PTA members) or **institutional memberships** (county or district office staff, board members, or interested individuals) who wish to avail themselves of personal copies of alliance products, e.g.,professional book club selections and monographs.

- **Individual membership** is for educators, parents, business leaders, or community members who as individuals wish to be part of the alliance and support the elementary reform effort.

What Are the Benefits of Full Alliance Membership?

Alliance schools have access to a wide range of benefits. For example, member schools receive:

- A certificate of full membership
- A copy of *It's Elementary!* for each teacher on staff or a selection of California Department of Education publications for the school's professional library
- A bimonthly *FAX Newsletter* with current information of interest to elementary schools
- Invitations to seminars, teleconferences, and other professional development opportunities provided by the local/regional chapter of the alliance and the California Department of Education
- Information about forming professional book groups at the site and copies of the latest educational books free for each teacher in the book group
- The opportunity to explore in-depth the type of authentic assessment tasks used in the new California Learning Assessment System
- Copies of the alliance's monographs that provide in-depth treatment of the recommendations in *It's Elementary!*, including related videotapes and training materials
- State and regional support for the school's change efforts
- An opportunity to participate in networks of like-minded elementary schools to work on projects of common interest
- An opportunity to send a team of two teachers, for the cost of one teacher, to selected summer institutes of the California subject-matter projects
- Reduced registration fees for selected conferences and seminars sponsored by the alliance partner organizations
- Continuing opportunities to influence educational policies and practices—contribute to the vision!

How Does a School Join the Alliance?

The California Alliance for Elementary Education is designed to bring together *all* schools that share the vision set forth in *It's Elementary!* Therefore, the steps in becoming a member of the alliance are simple, but each is significant.

First, the administrators, teachers, and other members of the school community should discuss the recommendations in *It's Elementary!*, as well as the alliance's statement of Basic Principles and Beliefs. While not everyone needs to agree with every statement and recommendation, a school that joins the alliance generally supports the 32 recommendations and basic beliefs expressed in the document. Once there is consensus, a school should decide whether to join as a full member or an associate member. Other agencies or individuals would decide whether to join as an institutional, institutional colleague, or individual member.

Second, seek the support of the district administration and the local school board. Board and district assistance will be critical as the school makes some of the significant changes envisioned in *It's Elementary!*

Third, contribute annually to the costs of the alliance. Membership runs from January to January, although schools may join anytime during the year. The cost of the membership will not be prorated. Each full member is asked to contribute $1 per student at the school to support alliance activities and pay for the benefits described on the previous pages. Associate members contribute $100 per school. Institutional members contribute $100 per year. Colleagues contribute $30 per year. Individual alliance members contribute $50 per year. Because of the current budget crises, even modest amounts may be difficult to raise for some schools. Schools eager to join the alliance should consider a variety of funding sources in addition to the general fund budget, including categorical resources such as SIP, Chapter 1 (for schoolwide programs), restructuring grants (SB 1274), and Chapter 2 (Targeted Assistance Area #3-Innovative Programs designed to carry out schoolwide improvements), fundraisers, contributions of parent and community groups, and contributions from the business and corporate community. Letters from the California Department of Education acknowledging external funding support will be provided to schools that wish them. Full members may elect to make their contributions in two equal installments with each installment in funds from a different fiscal year, e.g., first installment, 1993-94 fiscal year; second installment, 1994-95, fiscal year.

More Information?

For more information about the alliance, contact the Elementary Education Office in the California Department of Education at (916) 657-2926.

Publications Available from the Department of Education

This publication is one of over 600 that are available from the California Department of Education. Some of the more recent publications or those most widely used are the following:

Item No.	Title (Date of publication)	Price
1063	Adoption Recommendations of the Curriculum Development and Supplemental Materials Commission, 1992: California Basic Instructional Materials in Science (1992)	$5.50
0883	The Ages of Infancy: Caring for Young, Mobile, and Older Infants (videocassette and guide) (1990)*	65.00
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1053	The Changing History–Social Science Curriculum: A Booklet for Parents (Spanish) (1993)	10/5.00†
0867	The Changing Language Arts Curriculum: A Booklet for Parents (1990)	10/5.00†
0928	The Changing Language Arts Curriculum: A Booklet for Parents (Spanish Edition) (1991)	10/5.00†
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1072	Commodity Administrative Manual (1993)	13.00
0978	Course Models for the History–Social Science Framework, Grade Five—United States History and Geography: Making a New Nation (1991)	8.50
1034	Course Models for the History–Social Science Framework, Grade Six—World History and Geography: Ancient Civilizations (1993)	9.50
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1046	English-as-a-Second-Language Model Standards for Adult Education Programs (1992)	7.00
0041	English–Language Arts Framework for California Public Schools (1987)	5.00
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*Videocassette also available in Chinese (Cantonese) and Spanish at the same price.

†The price for 100 booklets is $30; the price for 1,000 booklets is $230. A set of one of each of the parent booklets in English is $3; a set in Spanish is also $3.

‡Also available at the same price for students who speak Cantonese, Japanese, Pilipino, and Portuguese.

Item No.	Title (Date of publication)	Price
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0929	Model Curriculum Standards, Grades Nine Through Twelve (1985)	5.50
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‡Also available in quantities of 10 for $12.50 (item number 9940); 50 for $55 (9941); and 100 for $100 (9942).

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